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# STRATEGIES FOR DIVERSIFICATION AND ADDING VALUE TO FOOD EXPORTS: A VALUE CHAIN PERSPECTIVE*

**Executive summary**

Developing countries are being encouraged to diversify their food exports by developing new products and adding more value to existing products. Adding value to and diversifying food exports depends not only on changing production and processing systems, but also on linking into appropriate marketing networks. A value chain perspective is used to identify various routes by which the value of food exports can be increased, focusing on strategies such as providing fresh produce, offering products for which consumers will pay a price premium and the development of branding and retailing activities.

An analysis of marketing channels and upgrading strategies for fresh vegetables, fresh fruit and coffee shows how the development of niche markets for high-value produce creates new opportunities for developing countries' producers and exporters that can meet the required standards. New marketing channels have opened up as a result of a combination of changing consumer tastes and the increasing dominance of large retailers in the markets of industrialized countries. The identification of opportunities for adding value and the development of strategies to take advantage of them are based on an analysis of the changing governance structures of food value chains.

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## A. Introduction

Food exports account for approximately 10 per cent of global trade. It is estimated that for developing countries food exports account for 60 per cent of all non-fuel exports (UNCTAD and Société Générale de Surveillance S.A., 1998: 2), and many of the poorer developing countries derive a substantial proportion of their total export revenues from one basic food commodity or a small number of such commodities. However, reliance on these products generates a series of problems. First, for long periods, developing countries have received stagnant or declining prices for exports of basic food commodities. World consumption of food commodities has grown slowly, and prices have been declining since the 1970s. The price trends can be clearly seen in table 1. World market prices for basic food products typically exported from developing countries – coffee, cocoa, tea, sugar and bananas – were substantially below their 1970 levels in 1990. While prices for coffee and cocoa rose between 1990 and 1998, prices in the latter year for all five commodities were well below the levels reached in 1970 and 1980. Forecasts for the year 2005 foresaw further falls in prices for all the commodities in the table. Secondly, there is evidence that developing countries have been receiving a declining share of the revenues generated from the sale of products in global markets. Morisset (1998) provides evidence of a widening gap between world commodity prices and consumer prices in industrialized countries in recent decades.[1] Similar findings have been presented for the case of coffee by Talbot (1997a). He argues that price changes in commodity markets are transferred asymmetrically into consumer country prices. Increases in world prices are reflected to wholesale and eventually consumer prices, but decreases in world prices are not accompanied by consumer price declines.

Recognizing these difficulties, development agencies have promoted the idea of diversification for commodity-dependent countries.[2] In the case of food industries, diversification might take the form of moving downstream into food processing, or beginning the production of new types of food products. The former strategy is a long-established strategy for adding value to basic food commodities. Forms of processing include preservation (canning, pickling, drying, freezing, etc.) and the transformation of raw materials into new products, such as instant coffee and fruit juice. This strategy faces a number of obstacles:

- Tariff barriers in developed countries are frequently higher for processed food products than for unprocessed products, and even after the Uruguay Round tariff changes, some tariffs have been bound at prohibitively high levels, restricting opportunities for processing.

- Food processing industries are well established in the industrialized countries. Developing countries wishing to expand into this field must either attract foreign direct

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1 This analysis compares the consumer prices, wholesale prices and world market prices for five basic food commodities (beef, coffee, rice, sugar and wheat) in six industrialized countries between the early 1970s and the early 1990s.

2 For recent examples of this approach as regards diversification in the food industry, see UNCTAD (1997a; 1997b).

investment (FDI) from the small number of companies that have a dominant role in activities such as fruit canning, or attempt to compete directly against transnational companies with strong supply relationships, brands and distribution networks.

- The economies of scale in certain areas of food processing are considerable. In cases where developing countries have made significant inroads into food processing – for example, orange juice production in Brazil, canned pineapples in Thailand, and soluble coffee production in Colombia and Brazil – the scale required for efficient production means that upstream access to raw materials and downstream access to markets must also be secured on a large scale. Many developing countries lack the raw materials, capital and market access to make processing viable.

- Demand for preserved products, such as tinned fruit and vegetables, has been stagnant in industrialized countries as consumers have switched to fresh produce.

These observations are not meant to suggest that food processing should be abandoned, or that it is not a viable strategy in particular cases. However, they do suggest that alternative routes to diversifying out of basic food commodities should also be considered. In the past two decades there has been considerable growth in what have been labelled non-traditional export crops (NTECs). These include fresh fruit and vegetables, which have seen particularly rapid growth: "one of the fastest-growing segments [of international trade] was fruits and vegetables, which as a group now accounted for a larger part of international trade than grains" (UNCTAD, 1997c: 5). In particular, imports into industrialized countries of high-value products such as exotic fruits and off-season temperate vegetables have increased considerably.

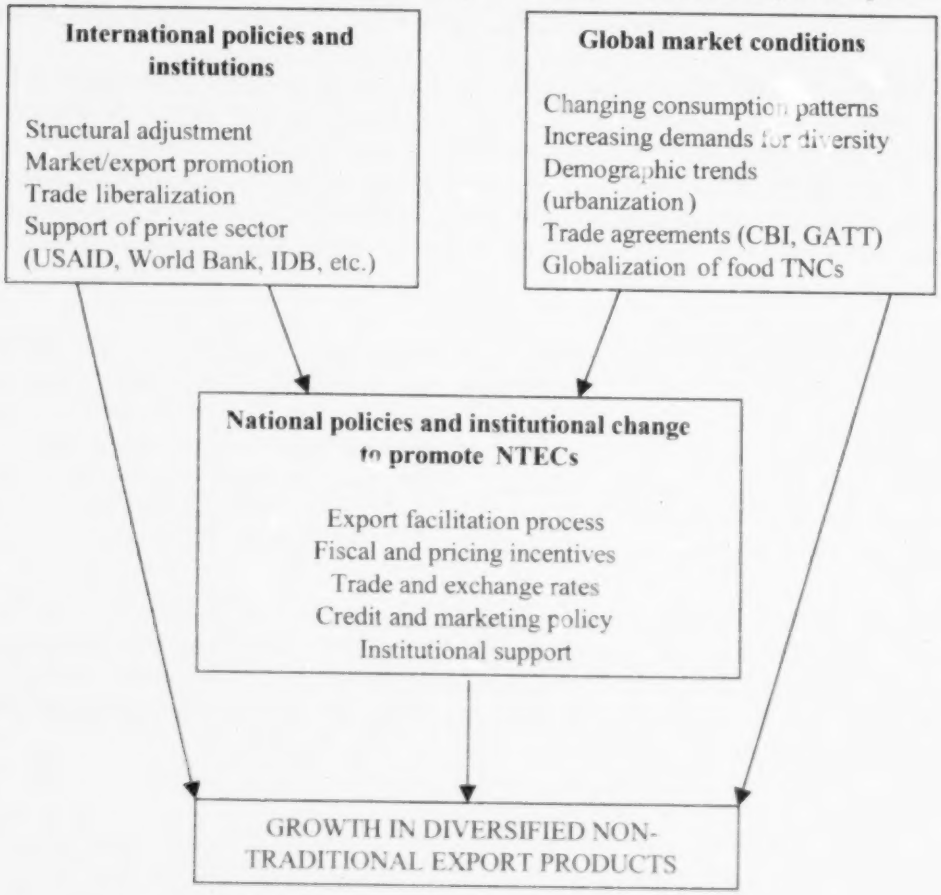
**Box 1: Key consumption trends in the European Union**

- "There is a trend towards healthy eating habits...
- Traditional fruit and vegetables are under pressure from exotic varieties attracting premium prices.
- Fruit consumption in general is on the increase, with exotic fruits receiving significant promotional support.
- Leaf vegetables and salad ingredients have increased their popularity as a consequence of their association with healthy diets and life styles.
- Pre-packed fruit/green vegetables are a fast developing niche, satisfying the consumer's demand for convenience and a healthy lifestyle, and attracting added-value premium prices."

*Source:* Profound (1997: 14).

The rapid growth of trade in these fresh fruit and vegetable products has been fuelled by changing consumption trends in industrialized countries. These trends are summarized in box 1. At the same time, there also signs of increasing consumption of niche, high-value food products such as specialty teas and coffees. However, these are not the only factors. Thrupp (1995) suggests that a combination of international policies and institutions, global market conditions and national policies and institutions combined to produce the rapid growth of NTECs in Latin America. These factors are summarized in figure 1.

Figure 1: Factors promoting development of non-traditional export crops




*Source*: Adapted from Thrupp (1995: 21).

It is important to noted that "diversification [for commodity-dependent countries] is not an end in itself but rather a means towards development" (UNCTAD, 1997a: 3). One of the concerns in the past about exporting fresh produce was precisely that it did not offer development opportunities. It will be argued in this paper that the trade in fresh fruit and vegetables, and in speciality coffees, offers opportunities for adding value and can create extensive employment and opportunities for skilled work. Furthermore, this strategy can help to avoid some of the problems associated with exports of crops processed in traditional ways. Tariffs are generally lower on fresh produce than on processed products, and instead of competing directly against large, established producers in industrialized countries, producers of such products in developing countries can develop roles complementary to those of importers and retailers in the industrialized countries.

This paper focuses on exports of NTECs from Africa and Latin America, taking selected products (fresh vegetables, fresh fruit and speciality coffees) to illustrate issues of market access, upgrading and the distribution of the revenue from NTECs. Entry into the markets for these products is not easy. First, the products are frequently either not produced for the

domestic market or produced to quite different quality and packaging standards. Therefore, entry into export markets requires considerable learning and adaptation to new and unfamiliar requirements. Secondly, the markets for these types of products are complex and demanding.

Typically, standards for product quality and consistency, delivery, packaging, and speed and reliability of supply are much higher than for basic food commodities. In some respects, the quality and logistics requirements are more typical of modern manufacturing industry than basic foodstuffs production. This not only imposes exacting production and processing requirements on developing country producers, but also puts a premium on information flows and linkages with buyers. Knowing the customer and establishing a reputation in the market are crucial.

These factors act as barriers to entry into these markets. How these barriers operate and how they can be overcome will be discussed in this paper from a "value chain" perspective.[3] This perspective, which will be discussed in the next section, emphasizes not only the fact that there is a long chain of activities linking raw materials to final consumption, but also that this chain consists of inter-firm linkages. How these linkages are managed and the consequences of this management for issues such as access to developed country markets and opportunities for adding value to food commodities will be discussed in this paper.

The next section discusses the value chain perspective and its relevance for the food industry. The subsequent three sections discuss the cases of fresh vegetables, fresh and processed fruit, and coffee.[4] The last section considers policies for promoting the production of these commodities and how Governments might identify products that might benefit from value-adding strategies.

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[3] A commonly used term for this perspective is "commodity chains" or "global commodity chains" (see, for example, Gereffi, 1994). However, this can give rise to confusion. Gereffi, in common with other writing from the world systems perspective, uses the term "commodity chain" to refer to any chain of value-adding activities linking enterprises dispersed across the global economy. This includes chains producing and trading high-value items such as cars, computers and aircraft. This use of the term "commodity" is very different from its use to refer to widely traded, basic products such as tin and coffee. Therefore, to avoid this confusion the term "value chain" will be used here.

[4] The trade in cut flowers, fresh fish and seafood would also be good examples.

**B. The value chain approach**

The value chain concept is derived from two main analytical approaches. The first source is the business and industrial organization literature, exemplified by the work of Porter. He defines a "value chain" as "the activities performed in competing in a particular industry" (1990: 40), defined at the level of the individual firm. A series of inter-linking company value chains form a "value system" (1990: 43). The second approach derives from the world systems literature on commodity chains. The early work on commodity chains focused on the physical transformation of commodities into products, tracing the many different, spatially dispersed activities that were linked together even in the early stages of capitalism. This concept was then developed by Gereffi into the "global commodity chain", which he defines in the following terms:

> "Global commodity chains have three main dimensions: (1) an input–output structure (i.e. a set of products and services linked together in the sequence of value–adding economic activities); (2) a territoriality (i.e. spatial dispersion or concentration of production and distribution networks, comprised of enterprises of different sizes and types; and (3) a governance structure (i.e. authority and power relationships that determine how financial, material, and human resources are allocated and flow within a chain)" (Gereffi, 1994: 96–7).

Various groups of researchers have worked with the same basic ideas, coining terms such as "global value chains" (Campbell, 1995), "productive systems" (Wilkinson, 1995), "value chains" (Kaplinsky, 1998) and "value networks" (Berger et al., 1999). Each of these research groups shares the view that international trade is increasingly structured by inter-firm transfers and flows within inter-firm networks. Campbell expresses the argument clearly:

> "Much international trade in goods and services cannot be thought of as a multitude of arm's-length transactions between countries. Instead, trade is organised within a structure or system of international production. In this sense, it is 'internalised' within the common ownership of multinational enterprises, or 'quasi-internalised' within a system of governance that links firms together in a variety of sourcing and contracting arrangements. Much international trade can therefore be said to be situated somewhere between 'markets' and 'hierarchies' " (Campbell, 1995: 1).

This means that developing country producers aiming to access developed country markets must enter into networks. These networks enable information about markets to reach the producer, and they enable the buyer to obtain information about, and confidence in, the supplier.

Starting from the marketing channel perspective, Keesing and Lall arrive at a very similar conclusion:

> "Much of trade theory is concerned with what determines comparative advantage in the production of traded commodities. In almost all of this theory, once an enterprise or industry has achieved 'competitiveness' in the sense of being able to produce and deliver goods at (or below) ruling prices in world markets, the marketing of those goods is not regarded as a problem. In the real world, by contrast, profits associated

> with manufacturing depend on information flows, getting orders from buyers and customers, and the design, packaging, distribution, 'selling', and servicing of the products... Trade theories pay almost no attention to the information requirements, information flows, and marketing efforts involved in exporting" (Keesing and Lall, 1992: 176).

Keesing and Lall use this insight to develop an argument about learning and links between buyers and sellers that has many similarities with the value chain approach, even though they make no reference to any of the value chain literature. They argue that such links are particularly important where there is a gap between the requirements of the domestic market and the requirements of export markets. When this exists, links with buyers assume a particular importance, above all in the phase of initial entry into export markets.

The export of high-value food products has many of these characteristics, as the market is complex and demanding, and information flows are critical. In order to understand how access to export markets can be facilitated, and how the returns to different activities are determined and in order to understand the processes of exclusion, incorporation and upgrading of producer capabilities, the dynamics of relationships within value chains need to better understood. Three issues are discussed: the governance of value chains, upgrading and the distribution of benefits within the chain.[5]

## 1. Governance

Gereffi (1994: 97) defines the governance structures of value chains as "authority and power relationships that determine how financial, material, and human resources are allocated and flow within a chain". He distinguishes two main types of commodity chains. Producer-driven commodity chains are typical of capital- and technology-intensive industries, where barriers to entry are greatest in production and the development of core technologies:

> "Producer-driven commodity chains refer to those industries in which transnational corporations (TNCs) or other large integrated industrial enterprises play the central role in controlling the production system (including its backward and forward linkages). This is most characteristic of capital- and technology-intensive industries like automobiles, computers, aircraft and electrical machinery" (Gereffi, 1994: 97).

In many respects, the auto industry has been a good example of a producer–driven chain. Historically, the leading assemblers in Western countries produced 60–70 per cent of the value of cars in-house, and controlled the design process, distribution (through dedicated dealers) and consumer finance. Another example of a producer-driven chain would be the aerospace industry.[6] In producer-driven chains, the buyer remains important, as is evident in

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5 The arguments put forward in this section have been developed in discussion with Hubert Schmitz at the Institute of Development Studies at the University of Sussex.

6 However, the characteristics of chains can change. In the auto industry, the distribution system is under challenge from independent dealers (particularly in North America), and Western firms have (i) outsourced an increasing proportion of car production, (ii) outsourced design activities to independent design houses and their suppliers, and (iii)

the military aerospace industry. However, it is the producer that is responsible for translating the customer's needs into a viable product, through the development of suitable technology, organization of the production parts both in-house and in the supply chain, and the organization of assembly.

Parts of the food industry clearly display the characteristics of producer-driven chains. The production of canned foods (fruit, vegetables, soups etc.) was for many years dominated by a small number of transnational enterprises. Firms such as Heinz and Del Monte were dominant in two key areas: canning and branding. They would source produce from independent growers, or use their own farms and plantations, and would sell their produce through a wide range of retailers, both large and small, but responsibility for developing and promoting the product lay clearly with them. Branded breakfast cereals and instant coffee also displayed these characteristics for a long period, although the position of all these companies has been challenged in recent years by the emergence of large retailers and their aggressive development of own-label products.

In contrast, buyer-driven chains are governed by companies that market the product rather than make it:

> "One of the main characteristics of firms that fit the buyer-driven model...is that frequently these businesses do not own any production facilities. They are not 'manufacturers' because they have no factories. Rather, these companies are 'merchandisers' that design and/or market, but do not make, the branded products they sell. These firms rely on complex tiered networks of subcontractors that perform almost all their specialised tasks" (Gereffi, 1994: 97).

The concept of a buyer-driven chain draws attention to the increasing importance of retailers and design/branding companies in the organization of global trade. In sectors where product and process technologies are unsophisticated and barriers to entry are low, the key actors in the chain might be the companies involved in design, retail and marketing. They take the key decisions that determine who is included in the chain and who is excluded, what products will be produced and how the supply chain and the logistics will be organized.

Once again, parts of the food industry display the characteristics of buyer-driven chains. Concentration in the retail sector has increased the influence of buyers in the food industry. The influence of large retailers such as J.C. Penney in the United States and Marks & Spencer in the United Kingdom has long been felt in the clothing industry. Retailers are also increasingly important in the food industry. They have begun to challenge the position of the large processors (Heinz, Kraft etc.), the major fruit producers (United Fruit, Del Monte etc.) and the commodity traders (Bunge y Born, Cargill etc.). In the United Kingdom, the rise of the large supermarket chains has been one of the most dramatic examples of concentration in retailing. By the mid-1990s, the top four retailers (Tesco, Sainsbury's, Asda and Safeway) accounted for nearly 75 per cent of all food sales in the United Kingdom, including sales of fresh vegetables (Fearne and Hughes, 1998). As they grew in size, they exercised increasing

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handed over logistics management to independent companies. A more general argument about how supply chains change over time can be found in Fine (1998).

influence on the structure of the food industry. They developed their own brands, in competition with industry leaders such as Heinz, Kellogg and Schweppes, took responsibility for product innovation,[7] restructured the domestic meat producing and processing industry and decisively restructured the fresh fruit and vegetables industry, as will be seen later in this paper. United Kingdom supermarkets have played a decisive role in defining how international trade in fresh fruit and vegetables is structured, positioning it within the market and determining who is included in or excluded from the chain.

Notwithstanding the insights provided by the distinction between producer- and buyer-driven value chains, it provides only a starting point for analysis. Whitley has argued strongly that this distinction needs to be developed further:

> "The conditions under which particular kinds of transnational coordination and control of production and distribution systems become established and reproduced – and those under which they do not – await further specification. One way of developing and understanding such transitional coordination systems would be to focus on how they organize and control activities across national boundaries, including the sorts of monitoring procedures used, the formality of control systems and the particularism and stability of contractual connections. Rather than simply considering whether the critical agents are producers or buyers, such an analysis would examine the circumstances in which relatively stable connections between suppliers and customers of different kinds were developed and reproduced by various agents on an international scale. How, for example, do certain final assemblers establish close relations of interdependence with key suppliers within and between countries? How are long term risk-sharing agreements between firms developed and maintained cross-nationally? In other words, the analysis of [global commodity chains] could broaden into the more general study of vertical governance systems within and across countries, in which the explanandum would be the different kinds of such systems and the explanans would focus on the mechanisms generating and ensuring trust and compliance between different kinds of economic agents operating in different institutional contexts" (Whitley, 1996: 417).

This point is critical. It should be remembered that governance is expensive and inflexible. In contrast to arm's-length market transactions, it requires investment in relationships, and this in turn reduces flexibility. While there is an extensive literature on supply chain management which emphasizes the advantages of close relationships between customers and suppliers (see, for example, Lamming, 1993; Sako, 1992), the need for governance should not be taken for granted.

It can be argued that three factors have increased the importance of governance in food supply chains. The first is the increasing differentiation of food products and packaging, which require close links with suppliers so that dedicated and varied products can be

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[7] Doel (1996) describes how Marks & Spencer created the chilled, ready meals sector in the United Kingdom, developing products and creating a whole new supply industry.

produced to match consumer demand. This is seen particularly clearly in the case of own-label products sold by retail chains. To the extent that the competitive strategies of retailers move towards differentiated, retailer-specific products, this will favour stronger governance of the supply chain. Secondly, as food retailers in industrialized countries seek out developing country sources for products which are either not consumed in those countries or produced to quite different standards, it is important to close the gap between existing producer capabilities and knowledge and those required for the export market. In some cases, this may be achieved through structured contact between retailers or importers in industrialized countries and exporters and producers in developing countries. Thirdly, increasing awareness of safety and environmental issues by Governments and consumers in industrialized countries has increased the risks to firms. In areas where the potential costs of non-compliance with standards are high and where compliance can be ensured only through monitoring, the chain must be governed. This can be the case, for example, with labour standards or pesticide residues. In both cases, firms in industrialized countries can be held to account for conditions in the supply chain which cannot be monitored effectively, or even at all, at the point of taking charge of the final product. Therefore, there is a case for introducing governance into the supply chain.

However, governance can be exercised in different ways and through different agents along the length of the entire food supply process, which stretches from production to the final consumer. It would be wrong to identify just two options – arm's-length, market-based transactions and tightly organized and governed chains that integrate all of the food supply process. Parts of the process may be coordinated and controlled, while others are ordered by market transactions.

One way of approaching this question is to consider the literature on marketing channels. This emphasizes importance of marketing and linkages between different agents in the chain. Different food products have quite distinct marketing channels, and these strongly influence the possibilities for upgrading and adding value. Van der Laan (1993) makes an important distinction in this respect between half-channel and entire-channel agricultural crops. He argues that the entire marketing channel linking producers in developing countries to consumers in industrialized countries can be divided into three sections: from the producer to the port of embarkation, from the port of origin to the port of destination, and from the port of destination to the consumer. He then distinguished between half-channel crops and entire-channel crops. In the case of half–channel crops, the marketing channel is split into two distinct sections. The exporter takes responsibility for the product only up to the point where it is sold to an intermediary or put into a market. In contrast, entire-channel crops are those for which there is a direct link between the exporter and the importer. A classification of crops according to their marketing channels is presented in table 2. With half-channel crops, there is a point at which governance structures are split. This pattern of trading is most suited to products with standardized requirements that can easily be verified at the point of sale. This does not mean that such products are easy to produce or that producers do not require detailed knowledge of final markets, as will be shown in the case of fresh fruit, discussed in section D below. Products are marketed through entire-channel systems when a high degree of coordination between producer and retailer is required. This might occur when product requirements are customer-specific or when logistics challenges are particularly great. However, it is possible for products to be marketed simultaneously through both types of

channel. The case of cut flowers is a good example. A large quantity of cut flowers are traded on the Amsterdam market, but some large retailers in Europe have bypassed this market and developed links directly with flower exporters in Africa (Raikes and Gibbon, 1999).

The value chain literature emphasizes governance within the chain, playing down the role of other forms of governance, such as cooperation at the local level, government regulation and international regulation. It will be shown in this report that local- and national-level governance of food crop production can play an important role in opening up access to export markets. Such governance might relate to the organization of producers, quality systems and meeting food and agricultural standards set by the importing countries.

## 2. Upgrading

Competitiveness is not achieved once and for all, and increased competitive pressures in the global economy put a premium on the ability to improve performance. On the one hand, trade liberalization will enable more countries to gain access to global markets. Those countries that have benefited from privileged access to the markets of developed countries will find that they are faced with new competitors. On the other hand, one of the insights of commodity chain analysis is that buyers systematically develop new sources of supply. Palpacuer (1997: 21-2) describes this in terms of the focal organizations in networks having "developed" and "developing" sources, which are put into tiers of subcontracting relationships. Once again, although the reference point for this argument was the clothing industry, it is equally applicable to parts of the food industry. Major food importers and retailers are constantly looking for new sources of supply.

These factors make upgrading essential if countries are to protect and enhance the incomes they receive from food exports. The importance of upgrading has long been recognized. If developing countries generally first enter export markets by producing labour-intensive products, in the longer term they will seek to move into the production of products that generate higher incomes. Kaplinsky (1998) takes the argument for upgrading a stage further by showing how the increased participation of low-wage workers in the global economy has been driving down the returns to such labour, creating a systemic risk for developing countries. Without upgrading, incomes will not just fail to rise, but are likely to fall substantially.

The commodity chain perspective defines two paths to upgrading. These are shown in figure 2, which is taken from an analysis of industrial strategy for the electronics industry undertaken by the Malaysian Government (Ministry of International Trade and Industry, 1996: 13). The problem for the Malaysian electronics industry, as defined by the Government, was that it was focused predominantly on the assembly of low-value products. Figure 2 represents this problem by identifying different activities within the value chain and the value-added per employee for each. Developing countries frequently specialize in activities such as assembly, which provide low value added per employee. Increasing the value added in developing countries can be achieved by two strategies, represented by the

horizontal and vertical arrows in the figure. One strategy is to shift market niches, making products that require higher value added per employee within the same range of activities.[8]

For example, Malaysia might try to attract firms assembling more sophisticated products: computers or hard disk drives, rather than televisions. The other strategy is to extend the range of activities undertaken by firms operating within the country. This is represented by the horizontal arrows. Examples from the Malaysian consumer electronics industry of this second shift would include not only the siting of some product development activities by transnational enterprises within the country, but also the allocation to Malaysian subsidiaries of responsibilities for regional coordination. For example, transnational enterprises might locate regional headquarters, regional procurement or regional training activities within Malaysia.

In the Malaysian case, the Government's particular concern was with the locational strategies of transnational enterprises within the electronics industry. These would be examples of producer-driven commodity chains, in which decision-making is concentrated in the hands of manufacturing companies, which tend to dominate technology and, frequently, marketing. A similar analysis would be equally applicable to buyer-driven chains. As will be seen below, in the fresh vegetables industry, activities relating to innovation, packaging, processing, food preparation and logistics may be sited close to where produce is grown, or close to the final market.

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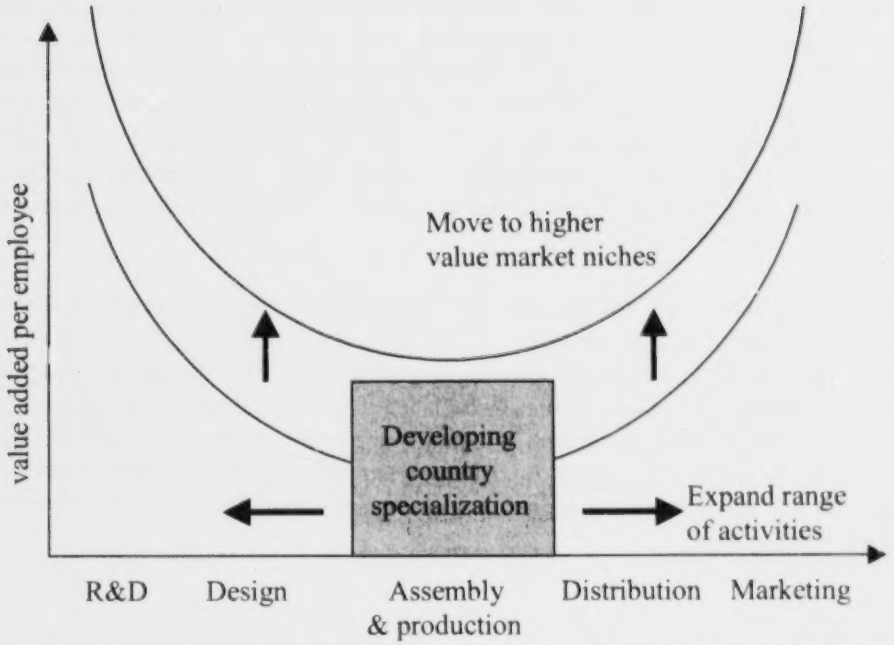
[8] Although figure 2 represent this upgrading strategy as a uniform shift upwards of the value-added curve, in practice a move into more sophisticated market niches would almost certainly increase the value added per employee in some activities much more than in others.

Figure 2: Upgrading strategies




*Source:* Adapted from Ministry of International Trade and Industry (1996: 13).

It is also possible to differentiate between different market niches in the food industry. In some cases, this is on the basis of the basic characteristics of the product. For example, truffles are a high-value, niche product sold through a well-defined range of outlets. It is also possible to market basic tea and coffee and single-estate teas and gourmet coffees. Even very simple products can be presented in quite different ways. This argument can be illustrated by consideration of the marketing of carrots. Carrots are a basic European vegetable, and the number of varieties is quite limited. Compared with apples or tomatoes, consumer choice of carrot varieties is quite limited. However, this does not prevent imaginative differentiation of carrot products in United Kingdom supermarkets. A range of different carrot presentations are routinely available, as can be seen in table 3. In the spring of 1999, one of the leading United Kingdom supermarket chains was selling a range of products based on raw carrots. As well as loose, Class 1 (the best) carrots, the supermarket was selling carrots ready-packed in a plastic bag and various types of carrots that had been peeled washed or sliced. In some cases, these were distinct varieties, while others were processed basic carrots. The most striking aspect of the table is the way in which the various forms of product processing greatly increased the price for what was basically the same commodity. Loose carrots sold

for 18p per pound (equivalent to 39.4p perkilo).[9] Merely packaging the same carrots in plastic bags more than doubled the price per kilo, while further processing raised the price much more. Peeling and slicing carrots increased the price to £2.83 per kilo, while mini-carrot batons and "mini-crunch" carrots could be sold at a price of up to £6.00 per kilo, or 15 times the price of loose, full-sized carrots.

Clearly, not all of the increased price of the processed carrots could be accounted for by the extra work involved in making the product. There is an element of rent in the price of these products. However, this simple example provides three important insights:

(a) The same basic product can be sold at very different prices, depending on the market niche at which it is aimed. In the case of carrots, the "mini-crunch" carrots were clearly packaged and presented as a snack, rather than as a vegetable.

(b) The sources of value added varied considerably. In the case of one-kilo packs of carrots, value was added through the process of selection, weighing and packing. In the case of mini–crunch carrots, part of the added value derived from the production of a particular carrot variety, and part from the washing, trimming and packaging of the product. For the retailer, the value added to the product might also include aspects such as the consistent quality of the product, confidence about hygiene and safety standards employed in its production (particularly important in ready-to-eat products) and the reliability of supply. For products whose shelf life and quality depend on being kept continuously in temperature-controlled conditions, value also derives from investments in the "cool chain".

(c) According to the way in which particular products are transformed and presented, the balance of activities specified in subsection 1 above will vary. Clearly, innovation, processing and packaging play a larger role in the creation of peeled, ready-to-cook mini-carrots than for loose, basic carrots. Similarly, when maintenance of the "cool chain" is important, logistics and investment in specialized processing, storage and transport facilities become much more important.

Carrots are just one example. It will be argued later in this paper that similar efforts can be made with other fresh vegetables, fresh fruit and coffees. It is also possible for developing country firms to upgrade their participation in food value chains by extending their activities beyond production. They might add value to products through the provision of inputs into the growing process, innovation (the development of new products and the development of varieties with new features, such as extended shelf life or growing season, improved packaging and presentation, and more complex processing), packaging and logistics. They

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[9] Even these carrots would have been washed. Supermarket consumers in the United Kingdom prefer to have their vegetables presented in a ready-to-use style, which is quite distinct from the product presentations seen in French supermarkets, for example.

might also extend activities into branding and marketing. Examples of how developing countries have extended their activities into all these areas will be discussed in the following sections.

Clearly, opportunities for upgrading are related to governance structures. It can be argued that in chains governed by leading transnational enterprises in the food-processing business, there may be some reluctance to relinquish control of processing activities. In contrast, in chains in which retailers play a dominant role, there may well be a tendency for value-adding activities to be pushed back along the chain towards the producers.

Nevertheless, it would be wrong to see upgrading as being solely a function of the nature of the chain itself. Producers and exporters of food products, together with supporting institutions and Governments (national and local), may also play a crucial role in upgrading. This would certainly seem to be the case at the most crucial upgrading point of all– entry into export markets–and to the extent that the upgrading process may require the seeking out of new customers and markets, this may be driven by agents in developing countries as much as by buyers from industrialized countries.

## 3. Distributing the benefits in value chains

Upgrading can be seen as a strategy that increases returns to producer countries by increasing the skill inputs into the commodity chain. However, in imperfect markets, the returns to particular activities depend not only on the skill content of these activities, but also on market structures and the distribution of power among different actors in the chain. This is theme raised by Gereffi (1994: 4), when he states that the Global Community Chain (GCC) approach explains the distribution of wealth within a chain as an outcome of the relative intensity of competition within different nodes. Kaplinsky (1998) has further developed this argument, starting with an analysis of export-oriented garment making within the context of the Caribbean Basin Initiative. Given the unskilled nature of this industry and the limited value added derived from garment making, barriers to entry were low and product prices were driven down. This process was exacerbated by competitive devaluations in the region. Countries found that even if they were able to increase the volume of exports and generate extra employment, the incomes from the sector declined.

This implies that developing countries will obtain better returns for their food products if they are able to provide industrialized country customers with hard-to-substitute products or services. The more the costs of substitution increase, the more they will be able to claim a larger part of the returns in the chain. Alternatively, if developing country producers are able to bypass certain dominant actors in the chain and obtain new routes to market access, they may also be able to increase their returns. The corollary of this argument is that if developing country producers and exporters "stand still", they will find themselves under pressure from new entrants into the market, some of whom will have been actively "scouted" by retailers and importers.

The fact that value chains have governance structures might be thought to provide some reasonable return to developing country producers and exporters. After all, continued participation in an inter-firm network would not be rational unless profits were being made. Jarillo (1988: 36), for example, argues that for networks to survive they must be both efficient and effective. Effectiveness means that the network is competitive, producing

products at a lower overall cost, while efficiency means that the network offers inducements to members that are greater than the effort put into it. This will only be achieved by a "fair" distribution of the surplus generated by the increased effectiveness. In the context of an analysis of agricultural marketing channels for Egyptian potatoes in the United Kingdom, Loader (1997), for example, refers to such networks in terms of "long-run relationships", "voluntary long-term binding agreements" and "commitment".

In practice, there are many examples of networks led by retailers that do not display these characteristics. Supply relationships may be long-term, but they do not necessarily provide security or a sense of fairness. The continuance of the relationship depends on the supplier's meeting demanding performance targets. Doel (1996), for example, describes the pressures experienced by suppliers to large retail chains in the United Kingdom, while Thrupp (1995) has documented the impact on Latin American growers', production of NTECs for the North American market.

Some value chain analysts emphasize the importance of control over functions within the chain that not only provide the best margins, but also make the firms offering them indispensable to the other members of the chain. Palpacuer has stressed that network coordinators are, typically, large companies that are responsible for the core, value-adding services which make the network competitive (Palpacuer, 1997: 23-24). They control strategic, hard-to-enter segments of the value chain–production in technology and capital-intensive industries–and retail and design in labour-intensive and low-technology industries. Similarly, Raikes and Gibbon (1999) refer to the "high-profit" functions in the chain that are controlled by large retailers, and see the tendency for value to be added at earlier stages in the chain as the shedding of low-profit activities by the lead firms in the chain. However, it is important not to overemphasize the degree of control exercised by lead firms. Firms within a chain adopt strategies to position themselves at advantageous points within it, and the locus of control within the chain may change over time. For developing countries the key strategic questions concern how to move to more advantageous positions within chains, through upgrading within a particular chain or moving to a different chain.

Value chain analysis can be used to consider not only the distribution of revenue between countries, but also within them. The requirements of particular value chains can only be met if appropriate production systems are put in place. It will be shown in the following sections that only certain types of production systems appear to have been able to meet the requirements of markets for fresh vegetables and fruit in industrialized countries. This has clear consequences for the development of farming systems and the distribution of income.

## 4. Foreign direct investment in value chains

The distinction in the value chain literature between producer - and buyer-driven chains has clear implications for foreign direct investment (FDI). Producer-driven chains are vertically integrated, and the dominant form of international expansion is through FDI. The car industry would be a good example of how transnational companies have invested directly

in developing countries, eschewing the licensing route for all but a few marginal markets. Similarly, leading food-processing transnationals such as Nestlé have invested heavily in developing countries In contrast, the lead companies in buyer-driven chains may not own any

factories or logistics facilities at all. Their FDI is concentrated in marketing and retailing. Instead of owning factories in developing countries, they own retail outlets and brand names in industrialized countries.

The analysis of food value chains reveals more complex, dynamic and changing relationships. Historically, transnational companies have played the important roles in many sectors of the food industry in developing countries, including those discussed in this paper. In the coffee industry, transnational companies have invested in plants for the production of soluble coffee in a range of developing countries (LMC International Ltd, 1997: 44). In the fruit industry, transnational companies continue to be important actors. Thrupp (1995) emphasizes the important role played by transnational companies in the NTEC sector in Latin America:

> "Three of the top four firms in Chile's Non traditional agricultural export (NTAE) production are owned by transnational corporations. In Central America, transnationals account for approximately 25 per cent of the total NTAE production, and they also handle distribution and transport for a large percent of the exports. This hold is strongest in fruits and vegetables. For instance, Del Monte in Costa Rica and Dole in Honduras market almost all pineapple exports. Both firms directly produce most of their pineapple exports and contract the rest to medium and large national growers" (Thrupp, 1995: 67).

Thrupp goes on to describe the role played by companies such as Dole and Chiquita in the production and export of products such as melons, mangoes and papayas, as well as the production and export of fruit juices.

The increasing sophistication of supply chains for fresh produce means that even when fruits and vegetables can be grown on a small scale, there are economies of scale, and considerable investment requirements in activities such as post-harvest processing, maintenance of the "cool chain", transport and marketing.

Nevertheless, FDI by transnational companies in the food business is only one of a number of patterns emerging in the industry. In parts of Africa, production and export of fruit vegetables are undertaken by locally owned companies, and some parts of the NTEC sector have many of the characteristics of buyer-driven value chains, as will be shown in section C. In the late 1980s and early 1990s, NTECs were typically produced by smallholders and then exported by locally owned companies to independent importers in Europe.[10] However, the industry has been changing rapidly. Vertical integration has taken place at various points in the chain. First, exporters have increasingly taken control of land, partly in order to acquire knowledge about growing and partly in order to guarantee supplies. Dolan et al. (1999: 29) show that half of all produce exported by nine leading fresh vegetable exporters in Kenya and Zimbabwe was produced on their own farms. Secondly, exporters and importers have developed closer ties. On the one hand, importers in industrialized countries have invested directly in producer countries. One of the clearest examples of this

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10 An analysis of the export industry during this period can be found in Jaffee and Morton (1995).

tendency is the Gambia, where one large foreign-owned exporter accounts for most of the export vegetable trade. Importers invest in exporting companies and in farms in the producer countries in order to ensure continuity of supply and to provide the resources needed for increased local processing. On the other hand, leading African exporters have invested in United Kingdom importers, or created their own "captive" importing companies. In this way, they diminish the risk of being substituted by exporters from other countries. Given that year-round continuity of supply normally requires imports from various countries, African exporters sometimes play down these investments, maintaining the fiction that the importer is independent. An example of forward integration by a large African exporter is shown in box 2.

The rapid growth of international sourcing of fruit and vegetables is creating more complex patterns of FDI. One reason for FDI is to secure access to land. Some large producers and exporters in Africa are investing in neighbouring African countries in order to gain access to land. A second reason is to secure year-round supply capability. United Kingdom importers and developing country exporters may invest in firms in other countries in order to guarantee a continued supply of produce at all times of the year. For example, some United Kingdom importers have invested in production facilities in Europe and the Middle East as well as in Africa in order to be able to supply supermarkets at all times of the year from their own farms. In the future, it is possible that large exporters will also invest more widely – partly to be able to supply year-round and partly to maximize the returns on their specialized knowledge of production and marketing. This investment may take the form of equity stakes, marketing tie-ups and so forth. For the largest developing country exporters, such FDI may be seen as the best means of guaranteeing competitiveness and a position in the chain.

**Box 2: A successful Kenyan exporter: Homegrown**

"Homegrown, Kenya's largest horticultural exporter, began operations in the early 1980s when the chief executive financed a colleague to grow horticultural produce for third party exporters. In 1982, Homegrown began exporting their own products to UK wholesale markets. The company now employs over 6,000 Kenyans on its eight farms, and its exports have grown from 17 tonnes in 1982 to 12,500 tonnes in 1997. It is now responsible for 15% of Kenya's total horticultural exports.

Homegrown's export activities are governed by a corporate philosophy, the Homegrown Triangle, which integrates three components: airfreight and logistics, marketing, and production. Each component is paramount to the company's success. Homegrown strongly believes that there is little point in having high quality production without the corresponding market and airspace to ensure that product reaches supermarket shelves in optimum condition.

- Airfreight. Homegrown's difficulties in ensuring uplift at Nairobi Airport led the company to realise the importance of airfreight to viable operations. During its early years, Homegrown maintained constant product supervision until the aircraft departed to avoid spoilage. Yet this was a sub-optimal situation and the company quickly realised that it had to assume greater control over airfreight to ensure quality. By the late 1980s, the company had achieved the critical mass to enter a joint venture with MK Airlines, which provides a freighter every evening to the UK, enabling Homegrown to secure continuity of supply and stabilise costs. The company also has a fleet of refrigerated vehicles to transport product from field to centrally located cooling and packing stations, and on to the airport.
- Production. Over 90% of Homegrown's crops are grown on their own farms using sophisticated irrigation systems and greenhouses to safeguard crops from rainfall and disease. The company recently invested £1 million to construct a diversion dam to store 70 million gallons of flood flow water for farm irrigation and has three additional dams underway. Homegrown also recently completed a factory for prepared salads, which guarantees that salads are picked, prepared, fully labelled and transported to supermarket shelves within 48 hours.
- Marketing. When Homegrown started, it exported to a multinational importer, which diversified its supply base by relying on several overseas growers. While this situation guaranteed the importer continuity of supply, it led to unfavourable returns for Homegrown. In response, Homegrown established its own dedicated importer in the UK. The company has developed a strong customer base of UK supermarkets, which are favourably impressed by Homegrown's continual investments in modern technology, innovation capabilities and compliance with environmental and social standards."

*Source*: Dolan et al. (1999: 24).

### C. Fresh vegetables

The European market for fresh vegetables expanded rapidly in the 1990s. The dynamism of this trade is rooted in several factors. Changes in dietary habits stemming from increased health awareness, together with demand for convenience foods, accelerated the consumption of prepared fresh fruit and vegetables. In the United Kingdom, retailers targeted households that wanted convenient, high-quality food, because fresh fruit and vegetables were purchased disproportionately by higher-income consumers:

> "Fresh produce has become what retailers describe as a 'destination' category – fresh fruit and vegetables is one of the few product categories (along with fresh meat and wine) for which shoppers will switch stores. It is also one of the two remaining categories (along with meat) which is virtually all own label and thus over which they can exert considerable influence and control. As a result, over the past fifteen years, the fresh produce department has moved from the back of the store to the front and has doubled its shelf area in store " (Fearne and Hughes..." 1998: 5)

It is widely recognized that sales of speciality vegetables (sugar snaps, mangetout, fine beans, babycorn, asparagus etc.) and prepared fresh food have grown considerably in the 1990s and are expected to continue growing rapidly in the foreseeable future. In the case of the United Kingdom market, Fearne and Hughes (1998: 5) estimate that "sales of speciality vegetables have increased by 21% in volume terms during the period 1993–96". They further draw attention to the rapid growth in sales of pre-washed salads, which are sold ready-to-eat. Sales of these products in the United Kingdom increased by 34.3 per cent in value terms between 1994 and 1996 (Fearne and Hughes, 1998: 25).

The impact of these demand trends on imports into the European Union (EU) is shown in table 4. Total imports of leguminous vegetables (Harmonized Standard classification 0708 – basically peas and beans) and vegetables such as artichokes, asparagus, mushrooms and sweet peppers (HS 0709) increased by 140 per cent in value terms between 1989 and 1997. Furthermore, sub-Saharan African countries were able to profit from this expansion, maintaining their substantial share of legume imports and increasing their share of HS 0709 imports. By 1997, the volume of imports of these two categories of vegetables from sub-Saharan Africa had reached Ecu 138 million. What had started as an off–season trade in temperate vegetables and specialist import of vegetables for the ethnic market had become a major all–year business.

United Kingdom retailers have raised the standards required for participation in this trade. In the United Kingdom, sales of fresh vegetables have become concentrated in the hands of a small number of retail chains. By 1997, the seven largest food-retailing chains (the six largest supermarkets and Marks & Spencer) accounted for 76 per cent of United Kingdom fresh fruit and vegetable sales, and they were also responsible for most of the import of fresh vegetables into the United Kingdom. Most European markets appear to be moving in the same direction of retail concentration. According to Raikes and Gibbon (1999), in all but three EU countries (Greece, Italy and Spain), the top five supermarkets accounted for over half of total retail food sales.

A study of the role of United Kingdom supermarkets in the African fresh vegetable trade (Dolan et al., 1999) argued that in addition to a strong requirement to be cost-competitive, the following requirements were placed on suppliers of fresh vegetables:

(a) Quality and consistency. Products must be visually appealing with a shape, texture and flavour that are attractive to customers. Ideally, the customer should be able to buy a product that is consistent in appearance and taste, not only at any one time, but also preferably across the growing season. Meeting these requirements means that the product must be grown to the required standard, and then processed, handled and transported in ways that minimize degradation.

(b) Reliability of supply. Supermarkets make strong demands regarding security of delivery and fear that if products are not available when customers go shopping, they will switch to other outlets. Because of freshness requirements, produce has to be shipped by air a number of times each week, sometimes even daily. Ensuring a continuous supply of fresh produce from Africa to Europe creates a considerable challenge for supplier organizations and logistics.

(c) Processing and packaging. The competition for high-spending, middle-class consumers who are willing to pay a premium for fresh, healthy food that can be prepared quickly has focused on offering an increasing range of prepared foods, product combinations and attractive packaging.

(d) Hygiene and safety. The Food Safety Act 1990 requires retailers to demonstrate that they have shown "due diligence" in manufacture, transportation, storage and preparation of food (Marsden and Wrigley, 1996). In practice, this mean showing that "reasonable" care has been taken to ensure food safety. In response to this requirement, supermarkets in the United Kingdom have developed systems that allow products to be traced from the field to the supermarket shelf. Pressure on food safety systems was increased in 1999 when the Government began a process of publishing the names of retailers found to have sold produce with excess pesticide residues. This strategy, known as "naming and shaming", made retailers particularly sensitive to this issue.[11]

(e) Ethical trade. Supermarkets are under some pressure to ensure that their production systems are socially and environmentally sound. The issues of labour and environmental standards have gained increased importance in the minds of consumers, and the Government has been actively promoting the involvement of retailers in the development of standards. United Kingdom

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[11] A discussion of the application of (HACCP) Hazard Analysis and Critical Control Point principles in the food industry in developing countries can be found in UNCTAD (1997b: 12-13). A more extensive discussion of monitoring and control of quality and safety in the horticultural industry is presented in UNCTAD and Société Générale de Surveillance S.A. (1998: 62-76).

(f) non-governmental organizations (NGOs) have been active in this field, and retailers have become acutely aware of the damage that can be caused to their image by exposés of poor labour conditions (particularly child labour) and environmentally damaging production processes.

The implications of these requirements for governance, upgrading and returns to developing country producers will be considered for the case of African suppliers of fresh vegetables to United Kingdom supermarkets.[12]

**1. Governance**

In order to meet the requirements described above, United Kingdom retailers have developed tightly-governed supply structures. Without assuming direct control of the chain or taking equity stakes in their suppliers, they have used their market power to define what should be produced, how and by whom. Entire-channel marketing systems with a high degree of monitoring and control have been developed.

Fresh vegetables are supplied by a range of developing countries, including countries in Africa, Central and South America, Asia and Europe. The range of fresh vegetables from developing countries and available in United Kingdom supermarkets in the spring of 1999 is shown in table 5. Attention will be focused here on African suppliers. The chain consists of producers of fresh vegetables in Africa, firms exporting from Africa, firms importing into the United Kingdom and United Kingdom retailers. There are no equity links between retailers and the rest of the chain, but some vertical integration has taken place further back in the supply chain. Exporters have increasingly taken control of land in order to guarantee supplies and increase supervision of the production process, although most major exporters do source produce from large farmers as well as from their own plantations. Tie-ups between importers and exporters are also common. Some African-based exporters have set up or bought into United Kingdom importers, while some United Kingdom importers have established links with (or bought outright) major African suppliers. Once again, this vertical integration is motivated by a desire to ensure access to markets and produce.

The United Kingdom retailers play the decisive role in the governance of the chain. They set the standards for the rest of the chain and define how the chain will be managed. Even the largest United Kingdom importers know that they must keep the supermarket buyer satisfied. According to a director of one of the largest United Kingdom importers, "Even if the customer [i.e. the supermarket buyer] is wrong, you have to go with it. The alternative is not palatable".

The first major issue is access to the chain. In addition to selecting importers, the supermarkets determine the importers' overall supply policy and the inclusion of particular producers and exporters in the chain. Strategically, the supermarket will determine how concentrated sourcing should be and which countries should be included in the supply chain. In the course of interviews with various leading United Kingdom importers, it became clear that major supply chain decisions, such as a concentration of sourcing of particular products from one country at any one time of the year, was a policy imposed by some large customers.

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12 This analysis is based on Dolan et al. (1999).

Similarly, one leading importer described how his major customer had insisted that he find a supply source in Egypt to complement existing sourcing from Zimbabwe.

Supermarkets also play a major role in the inclusion and exclusion of particular exporters and producers. No exporter will gain access to the chain without an initial inspection by supermarket staff and exporters and producers are required to introduce supermarket-defined systems for quality and traceability. While the importer will be responsible for regular monitoring of the system, supermarket staff will make visits to exporters and a selection of their producers. In principle, supermarkets should know precisely where particular product batches have come from, and they should be able to trace the product back along the chain and find records to track such issues as pesticide use, storage and transport. In practice, the need to maintain continuous availability of produce in the store means that these standards are not always met.

The supermarkets also define the range of products they require, how they should be packaged and when and how frequently they should be delivered. They do not take responsibility for putting in place the systems that can meet these requirements, and they are open to innovations and suggestions from their suppliers. Suppliers may make suggestions about new products, new varieties, new product presentations and special promotions.[13] The ability to innovate may be one of the features that distinguishes one supplier from another. However, the final decision rests with the supermarket buyer.

## 2. Upgrading

The requirements and structure of the fresh vegetable chain have led to African producers and exporters acquiring new functions. Not only have the requirements of the chain created new and more complex tasks that are carried out in Africa, but also the supermarkets have encouraged African exporters to take on an increasing share of the processing activities formerly carried out by United Kingdom importers. These include not only basic tasks such as washing and trimming, but also more technically complicated tasks such as bar-coding and labelling. The exporters are also responsible, jointly with the importers, for developing quality systems and ensuring traceability.

More recently, African exporters have acquired even more sophisticated functions. First, African exporters have started supply of ready-to-eat products such as prepared salads. These require much higher levels of hygiene and specialized "high care" facilities. Secondly, in collaboration with United Kingdom importers they have become involved in the innovation process. For example, they may be responsible for testing new product varieties or arranging for new packaging to be introduced. Frequently, the supermarket will specify its requirements, but leave the importer and African exporter to find a way of meeting them.

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13 For example, leading importers will carry out their own market research to find out why consumers buy particular products so that they can package and present them in more attractive ways. However, the importer can only suggest to supermarkets ways of using this information to increase sales and margins.

The demands of the chain also provide African firms with the opportunity to develop logistics capabilities. The quality of fresh produce depends on rapid transport and processing in temperature-controlled conditions. This requires the integration of harvesting, processing, land transport, air transport and storage. Exporters play a major role in organizing all these activities in the chain, and this provides a range of skilled work for employees based in Africa.

### 3. Returns to activities

The siting of the these value-adding activities in Africa does not mean that African producers, processors and exporters obtain most of the revenue from the fresh vegetables trade. In fact, the opposite is the case, as can be seen clearly in table 6. In the case of two types of bean, one exported from Zimbabwe and the other from Kenya, the costs of the producer, exporter and packaging amounted to 22.6 per cent and 27.2 per cent of the final price of the product. The greatest margins were at the end of the chain, at the supermarket. While the prices paid to producers vary considerably across the growing season because of changes in availability of supply and levels of consumer demand, the overall balance of returns is clearly illustrated by the two cases.[14]

The benefits for African producers and exporters of participation in the fresh vegetables commodity chain should not be overestimated. Most of the revenue from the chain goes to the United Kingdom supermarkets and importers, and to the companies which air-freight the product. Similarly, the fresh vegetables business is competitive, and buyers are concerned to cut costs as far as possible. Nevertheless, overall prices for vegetables appear to have remained firm. As can be seen in table 7, the five leading African exporters of fresh vegetables into the United Kingdom, increased their volumes by 191 per cent between 1989 and 1997. Demand for fresh vegetables in Europe has been buoyant in the 1990s. Equally important, the price paid per ton of vegetables did not decline in the period 1989–1997. The price per ton was 27 per cent higher in 1997 than in 1989 in nominal terms. The price index trend does not show the type of collapse in commodity prices seen in table 1.

These prices may reflect increased requirements in the chain in terms of quality, processing, logistics and food safety, and they do not necessarily mean that the margins of local producers and exporters have improved. In fact, local producers and exporters interviewed in Kenya and Zimbabwe complained of pressures on margins. The structure of the industry favours such pressures. On the one hand, an increasing number of potential suppliers in Africa want to enter this attractive market. On the other hand, the supermarket business is increasingly concentrated, and to the extent that the quality and processing requirements of United Kingdom retailers are greater than those of other potential market outlets, exporters need to obtain United Kingdom prices in order to obtain a return on their

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[14] Supermarkets charge fairly constant prices across the season. Some United Kingdom supermarkets offer exporters a fixed price in advance of the season, while others vary the price according to the prevailing prices for imported produce in United Kingdom markets.

asset-specific investments. Therefore, it is hard to diversify the customer base. This market structure favours the retailers. Given that one route to maintaining a long-term relationship with a key customer is to continue to add value and offer more complex products and packaging, the exporters become even more dependent on the United Kingdom market.

The requirements of the supermarket fresh vegetables value chain have clear consequences for production systems within developing countries. While growing fresh vegetables is not scale-intensive and was largely carried out by smallholders in the early days of the Kenyan export industry, processing, the maintenance of the cool chain and the development of quality and logistics systems have favoured the emergence of large exporters. These exporters have themselves been subject to pressure to guarantee quality and safety by sourcing from large farms. It is possible for cooperatives and outgrower schemes to meet the standards required in export markets, and United Kingdom supermarkets do source produce from cooperatives in Southern Europe, but supermarkets clearly feel more comfortable sourcing from large farms.[15]

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15 This issue is discussed in more detail in Dolan et al. (1999).

### D. Fresh and processed fruit

The development of demand for fresh fruit is in some respects similar to the case of fresh vegetables. Consumers in industrialized countries have increasingly looked for year-round supply of fresh fruit as part of a concern with healthier eating. According to Friedland (1994), two major developments have influenced consumers' expectations of year-round availability: the great extension of the production season through various advances in technological capabilities, and an expansion of the variety of fruit and vegetables. The fresh fruit industry has experienced rapid growth over the last 15 years, and some developing countries have been able to acquire important positions within the global market benefiting from counter-seasonal supply of fruit.

The change in consumer preferences away from preserved fruit towards fresh fruit and the strong marketing strategies of the suppliers have brought new products onto the market. In the late 1990s, the best opportunities in this field appear to lie in the provision of new tropical fruits, the so-called exotic fruits, and in the supply of prepared fresh fruit and partly-dried fruits.

A number of Southern Hemisphere countries, in particular, have taken advantage of the opportunities offered by the development of the fruit industry. Australia, New Zealand, Chile and, more recently, South Africa have become major exporters of temperate fruits, while some African countries, Brazil and Central American countries have exported tropical fruits.

Fresh fruit is a high-value food with a short shelf-life, which can sell at premium rates if quality and reliability standards are met. The challenge for fresh fruit suppliers is to maintain freshness from the point of collection from the plant up to the point of placing it on the supermarket shelf. The expansion of these segments of the market has been made possible by the establishment of production capacity through the export of capital and technological expertise and the establishment of capital-intensive "cool chains" which guarantee chilled temperatures for transport from the producer to the consumer. As in the case of fresh vegetables, well-handled logistics are required, including organized storage, transportation and importer networks.

While tropical fruits such as bananas and oranges have been established in Northern markets for a long time, "new" fresh tropical fruits such as kiwifruit, pineapples, mangoes, papayas, melons, lychees and chirimoyas have begun to penetrate the markets of industrialized countries. These products are considered to have great market potential. Many day-to-day supermarket consumers have still never tried or are completely unaware of the fruit variety on the shelves. Retailers are using marketing and promotional strategies such as "free tasting" or "buy one, get one free" in order to increase the awareness of new products and to introduce them to new consumers.

As with fresh vegetables, the requirements of export markets are demanding. Analysing fruit export from north-east Brazil, Damiani (1999: 101) sums up consumer requirements as follows:

> "Consumers in industrialized nations give great importance to fruit characteristics, such as colour, size, uniformity and taste. Fruit characteristics have to be as uniform

> as possible, avoiding fruits of different sizes and even of different tastes. Some of these characteristics are often specific for each country or group of countries; for example, European consumers prefer melons or watermelons of small size that can be fully consumed in a single meal. In contrast, consumers in Latin American countries prefer them in a large size."

Exporters also have to adjust their growing strategies to the market conditions created by competition from other growing regions and trade restrictions. In the case of Brazil, the "windows" of export opportunity are limited. According to Gomes, the best opportunities for Brazilian melon producers in the Europe are after Spanish melons have ended their season in the late autumn and before melons from Costa Rica and Honduras arrive in the European market in January and February. In the United States, Brazilian melons only gain access to the market when Californian growers are no longer able to produce them (Gomes, 1999: 21). Similarly, Damiani (1999: 104) suggests that growers of mangoes and grapes in the Petrolina-Juazeiro region of north-east Brazil concentrate their exports in very specific periods of the year: June-July for grapes and October-November for mangoes. Exporters need to be aware of these differences in consumer tastes and the regulations governing market access.

Data on the growth in value and volume of imports of some of these newer fruits into the European Union from the African, Carribean and Pacific countries (ACP) and Brazil in the period 1989–1997 are presented in table 8. The table shows that volumes of imports of pineapples, mangoes and melons increased during that period. Imports of mangoes and melons increase substantially, albeit from a low base. Imports of pineapples, which were substantially greater in value, increased more slowly. The rapid growth in volume of imports of mangoes and melons was not matched by increasing prices. With the exception of melons imported from the ACP countries, the index value of the price per ton of all the fruits in the table declined between 1989 and 1997.

Issues of governance, upgrading and returns to producers of fresh fruit will now be discussed, with the focus mainly on Brazilian exporters of melons, mangoes and grapes.

**1. Governance**

Fresh fruit can be exported through half-channel or entire-channel marketing systems. Some large retailers have developed supply systems for fresh fruit similar to those described in the previous section for fresh vegetables. In the United Kingdom, many supermarkets source their fresh fruit from the firms that supply vegetables, and there are similar pressures to maintain close control over the whole supply chain. In 1999, the United Kingdom Government's policy of "naming and shaming" retailers found selling fruit with greater than permitted pesticide residues increased the need for control. According to one major fruit importer, it created pressure on importers to monitor pesticide use more closely and to suspend the import of exotic fruits whose volumes could not justify sophisticated monitoring procedures.

Some Brazilian producers supply European supermarket chains, and they exert the same pressures as seen in the case of fresh vegetables:

> "An interesting point about the relationship between the growers and the European supermarket chains is that the overall improvement in product quality and working

environment that has resulted from buyer demands. The supermarkets are extremely demanding in terms of product quality and conduct yearly visits to the melon farms to ensure that they are getting the level quality they want. During their visits, they inspect the entire production process, paying particular attention to cleanliness and safety of the working environment in the packinghouse. They are not so much concerned about good working conditions for labourers as they are about the conditions that will enable appropriate handling and packaging of melons. They are concerned about workers washing their hands upon leaving the restrooms and about the possibility of any type of foreign particle accompanying the melons. For instance, supermarkets require that all the lights (usually fluorescent lamps) in the packing houses be covered by a mesh-type net just in case a lamp accidentally breaks and falls over the melons" (Gomes, 1999: 23).

When exporters deal with large customers, market requirements will be transmitted through the chains. They will receive information about what types of products can be sold and the periods in which produce is required. In Northern Europe in particular, supermarkets and hypermarkets are responsible for an increasing share of fresh fruit sales, and they tend to establish entire-channel marketing systems, making direct contacts with growers (ProFound, 1997: 28). In spite of this, buyers acting as intermediaries in wholesale markets continue to play an important role in the fresh fruit market. They also provide detailed information to exporters. Exporters will make arrangements with these buyers, who will then sell on the produce to retailers. In this case, the degree of direct control by the retailer is lower, but relations with buyers are important for transmitting information about market requirements and for arranging supply at definite points in the year.

The Brazilian case also highlights the role played by business associations and Governments in supplier countries in the promotion of fruit exports. This role can be seen in relation to three issues: initial access, reputation and government standards.

(a) Initial access. Exporters face a start-up problem. Export markets are demanding, and as markets for fresh fruit develop and become more sophisticated, entry requirements increase. Exporters have to reach minimum standards of sophistication before they can enter export markets and benefit from the information flows generated by this entry. Therefore, some form of early transmission of market requirements is necessary. In the Brazilian cases analysed by Damiani and Gomes, this role was played by a mixture of large private firms and government agencies. In the latter instance, a crucial role was played by the agencies responsible for promoting agricultural production in areas that were being transformed by irrigation schemes.

(b) Reputation. When entire-channel marketing networks are established, reputation is established bilaterally between particular growers/exporters and particular customers. The individual producer is known to the consumer. When half–channel networks are used for fruit exports, reputation is frequently defined at the level of the country or region, and protecting this reputation requires local governance. Damiani (1999: 108-110) describes how early high returns for Brazilian melons at the public bidding in Rotterdam harbour attracted many new producers and exporters, with unfortunate consequences: "Because several exporters sent fruit of bad quality, the price paid in biddings of

(c) melon from Petrolina-Juazeiro in Rotterdam fell dramatically by 1986 to levels that did not [meet] the costs of exporting the product. As a consequence, the prices of melon received by producers fell sharply that year, leading to a collapse of the crop..." (Damiani, 1999: 108).[16] The response in the region was eventually to set up an exporters' association to control export quality.

(d) Government standards. The accounts of Brazilian fruit exports by both Damiani and Gomes emphasize the critical importance of pest control regulations for access to the United States market. The United States Department of Agriculture (USDA) regulates fruit imports in order to prevent the introduction of pests. Growers in both fruit-growing regions of Brazil considered here had to satisfy the USDA that fruit fly was not a problem. This required research by the Brazilian Government (the USDA would not allow this research to be carried out by the private sector), a local, on-going monitoring programme, agreed programmes of treatment where required, and coordination with USDA officials. Accordingly, a high degree of institutional interaction within Brazil was required.

These cases emphasize an aspect of governance frequently ignored or underplayed by value chain analysis. While entire-channel marketing networks may provide producers and exporters with information and support, certain problems require collective action and institutional support at the local and national level.[17] This support is more important when products are marketed through half-channel networks.

## 2. Upgrading

The fruit industry also provides evidence of the importance of institutional support for upgrading within supplier countries. In this section, two upgrading questions will be considered: the development and marketing of new varieties of fruit, and the development of processing. The first question is discussed using the case of Côte d'Ivoire, while the second is considered using material from United Kingdom supermarkets.

Côte d'Ivoire is one of the fastest-growing African exporters of mangoes. It was the third largest importer into the European Union (after Brazil and South Africa) in 1997, and exports had increased by 40 times since 1981. Côte d'Ivoire produces a range of five different types of mango, one of which–"Kent"–has been the most popular among European consumers because of widespread recognition of its appearance, colour and taste. The OACB– the fruit producers'/exporters' association in Côte d'Ivoire–began a campaign to promote the second most popular type, "Amélie". Amélie retains a green colour, even when ripe, and is unfamiliar to the consumer in Europe. Producers in Côte d'Ivoire believe that it has outstanding flavour, and because it is indigenous to West Africa, would give the region great scope for market success (Eurofruit, 1998).

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16 Later, fruit exports in this region shifted towards grapes and mangoes, and another irrigated region in north-east Brazil, Mossoró-Assú, became the leading melon exporter.

17 The exporters association in Petrolina-Juazeiro later joined with associations from other parts of Brazil to create IBRAF, the Brazilian Fruit Exporters Association.

Rather than wait for the market to discover this product, the OACB, in alliance with European importers, launched an information sticker in three languages (French, English and German) to cover the entire European market at once, with hints concerning the ripeness of the Amélie variety, how to prepare the fruit, its nutritional benefits and storage conditions. Thus, the producing country was directly involved in product diversification and in the promotional campaign. The OACB's quality strategy introduced progressive training programmes for its associates for packaging and harvesting in the country. It also introduced an internal quality system so that the quality and reliability of quality products were guaranteed. These factors combined gave the Côte d'Ivoire an opportunity to continue to increase its share of global markets, and exporters were seeking out new importers, particularly in Northern European countries, and diversifying their markets by establishing networks with Saudi Arabia and the United Arab Emirates (Eurofruit, 1998).

This example shows that local agents have a role to play in developing market access and promoting new products. Different fruit-growing countries around the world have organized their fruit-exporting activities in different ways. Damiani (1999: 122) notes that the producers in Petrolina-Juazeiro studied various models for the local organization of fruit marketing, including the Chilean model, based on large export marketers, and the New Zealand and South African models in which a public or semi-public agency controls export marketing. However, the important point to note is that without some form of local organization, all but the largest producers and exporters become dependent on their buyers for upgrading.

As in the case of fresh vegetables, the market for fresh fruit offers opportunities for increasing processing because of a shift towards convenience and prepared foods. Supermarket observations in the United Kingdom give a clear indication of product diversification. All large supermarkets have devoted considerable shelf space to prepared fruit products and semi-dried fruit, which sell at premium prices.

Once again, product presentation plays an important role, and one innovation is the presentation of ready-to-eat single and mixed fruit presentations in transparent, plastic packaging. These require complex and expensive filling equipment, but the price premium can be significant. The information in table 9 is based on visits to branches of the two largest United Kingdom supermarket chains. It can be seen clearly that in terms of weight, tinned fruit is by far the least expensive, and even the internationally known brands sell for little more than the supermarkets' own-label produce. In comparison, pineapple chunks presented in a see-through plastic package are sold for double the price per 100 grams of the tinned product. Furthermore, the recently introduced semi-dried product sells for considerably more than this. This product is not fully dried,but retains some moisture and is sold in a resealable foil packet. Although the products found in the two supermarkets were packed in the United Kingdom, one leading Zimbabwean exporter of fruit had already produced a similar product packed in South Africa. Early in 1999, this company's United Kingdom importing business was trying to sell this product to United Kingdom supermarkets.

There is considerable scope for further adding value to fruit products. For example, fresh fruit salads can be targeted at particular market segments, and the composition and the fruit preparation tailored to meet particular cost targets. The variety of products available in supermarkets in the United Kingdom shows that there is considerable potential for new products.

The extent to which this type of processing will create opportunities for adding value in developing countries is unclear. The contents of mixed fruit products, for example, are frequently from different countries, and this means that the preparation and packing are carried out in the United Kingdom thus limiting the opportunities for adding value in the countries of origin. Similarly, processing close to the point of origin is less efficient when production is strongly seasonal. Kenyan exporters, for example, can process and pack beans all year round, while Brazilian producers of melons might use expensive processing equipment only for limited periods of the year. Nevertheless, visits to various United Kingdom food retail chains showed that prepared fruit products packed in the country of origin were available. Three own-label products out of eight found at Marks & Spencer were packed in South Africa. Equally, three similar products out of twelve at Sainsbury's were prepared and packed in Ghana.

### 3. Returns to activities

The factors determining the returns to producers and exporters of fresh fruit are similar to those for fresh vegetables. Retail markets are concentrated and there are many potential producers. To the extent that half-channel marketing networks are used, there are additional risks for growers and exporters. One of these risks– the damage to the reputation of a whole region that can be caused by shipments of sub-standard produce–has already been highlighted. A second "collective action" problem that arises in half-channel networks is the timing of export shipments. If many exporters send their products to the same market at the same time, prices are quickly depressed, and coordination is required. Once again, producing countries face a difficult trade-off. If they invest in equipment to produce more sophisticated and more highly processed products, they can add value to their products and develop a more stable relationship with their major customers. On the other hand, the more they are tied to particular customers, the more they are subject to the enormous market power that has resulted from concentration in retailing.

Clearly, the supply of fresh fruit aims at a niche market, at the high-income-earning part of the population. Exotic fruit is sold at premium prices not only to enable fresh supplies but also because of its exotic image. A large part of this premium remains with the retailer. For example, Thrupp (1995: 77) suggests that producers in Guatemala received 8 cents per pound for mangoes selling in the United States for 99 cents per pound. However, as with the case of vegetables, there is scope for activities such as washing, cooling, packing and labelling for transport near the growing location. These activities, and the importance of the "service" relationship in the provision of perishable products, provide opportunities for adding value.

Exotic fruits can be produced by smallholders, and there is some smallholder production in Central America. However, in the case of the Petrolina-Juazeiro region of Brazil described above, most fruit exports were grown on large farms and processed by large companies. The smallholders settled in the newly irrigated farmland tended to produce less-demanding crops than the large farms. According to Damiani (1999: 138-139), the higher capital investment and quality certification required for exports of grapes and mangoes were hard for the smallholders to achieve. Smallholders were more likely to produce products such as beans, industrial tomatoes, onions and watermelons for the domestic market. Gomes (1999) describes a more complex situation in Mossoró-Assú, where some large exporters subcontracted melon-growing to smallholders, and where medium-sized firms have

established their own marketing channels. However, Gomes emphasizes that this became possible only when credit and marketing support was made available by local agencies.

## E. Coffee

The material flows in the coffee value chain are relatively simple, consisting of (i) growing and initial processing on the farm, (ii) processing up to the green bean stage, (iii) exporting, (iv) shipping, (v) importing, (vi) roasting and (vii) retailing. While, in general, steps (i) to (iii) of the activities that add value to green coffee beans stay in the producing countries, (iv) to (vii) stay in the consuming country. The chain is comparatively simple because only a limited number of final products can be obtained – instant, ground and roasted coffee for final consumption – although it will be shown later that product diversification is taking place. Additionally, there are only very few inputs needed along the chain for the final product.

In the cases of fresh vegetables and fresh fruit, part of the available scope for adding value lies in increasing processing near the point of production. This is an example of expanding the range of activities undertaken – moving horizontally in terms of figure 2. In the case of coffee, the strategy of increasing processing close to the point of production faces certain barriers. The easiest way to process coffee is to transform it into soluble coffee, and various countries have tried to increase production and exports of product. There are certain barriers to the strategy, however. First, the tariff structures of industrialized countries generally tax imports of green (unprocessed) coffee at a lower rate than roasted or soluble coffee.[18] Secondly, the production of soluble coffee is capital-and scale-intensive, and most developing country producers have depended on links with one of the major transnational companies, not only for technology but also for marketing (LMC International Ltd, 1997:40-44). An attempt by Brazilian producers to make and export soluble coffee in the 1970s was quickly reversed by United States regulations impeding imports and by backward integration of transnational producers into developing countries (Talbot, 1997a).

A second possible route towards developing processing would be to export roasted beans, but this also presents problems. Ground coffee quickly becomes stale, and processing close to the final market is favoured on the grounds of freshness. The largest part of exported processed coffee is in soluble form, and only 0.2 per cent is roasted (International Trade Centre, 1992: 93). However, the level of market concentration in the production and sale of roasted coffee in Europe is lower than for soluble coffee, with various producers operating in different countries (LMC International Ltd, 1997: 40-44:13).

In spite of these difficulties, the need for developing countries to find new ways of generating greater revenue from coffee production is clear. Overall world coffee consumption has been fairly stagnant, and prices for coffee traded on world markets have fallen considerably in recent years, as was shown in table 1. As in the case of other tree crops, the time taken for new plantings to mature means that coffee supply cannot respond rapidly to price fluctuations. Coffee tends to suffer from overplanting of crops following periods of shortage and high prices, followed by long periods of lower prices due to the subsequent oversupply.

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[18] Even following the Uruguay Round agreements, the European Union and Japan will maintain tariffs on roasted and soluble coffee, while allowing unprocessed coffee to be imported duty-free (UNCTAD, 1995: 33).

The decline in coffee prices, and changing consumer preferences, coupled with the decline in consumption in the United States, have given impetus to product innovation and diversification, by both transnational companies and the producing countries. Consumption of soluble and decaffeinated coffee is declining overall while demand for gourmet and speciality coffees is increasing. The development of speciality and gourmet coffees opens opportunities for niche producers that produce high-quality coffee on a perfectly reliable basis, for organic or ethically trading coffee producers that can exploit new consumer thinking and for new innovatory companies that play on the consumer's sophistication. Overall, preferences have shifted more to mild arabicas away from robusta beans.

**1. Governance**

The coffee sector shows a variety of different governance structures. The soluble coffee industry is predominantly organized in the form of a producer-driven chain, in which the large processors play a major role in sourcing, processing, branding and marketing their product. However, there has been some shift towards sales of own-brand soluble coffee by large retailers in industrialized countries.

The market for green coffee beans has many of the characteristics of arm's-length market transactions. Some coffee is traded on world markets in this way. However, even when coffee is traded through direct contact between buyer and seller, the key characteristics of arm's-length transactions remain. The product is standardized, rather than customized to meet particular customer specifications, and information flows between buyers and sellers are limited.

In some segments of the market more customized and differentiated products have been developed. These include gourmet coffees, speciality coffees, organic coffees and "fair traded" coffees. These may require some degree of local governance–for example, to ensure that small growers meet quality standards. The development of the speciality market has unclear consequences for developing country producers. First, it has increased demand for top-quality coffees and localized products, providing a premium to producers of particular coffees. Secondly, it has been suggested by Raikes and Gibbon (1999) that the rise of this market segment has led to a decline in the power of large retailers. It is unclear whether declining returns to retailers were entirely appropriated by the processors, or whether this change in buying patterns also created fragmentation in the processing industry and allowed some of the benefits to reach producers.

**2. Upgrading**

The traditional routes for developing countries to add value to coffee through processing encounter stagnant or tightly controlled markets. The upgrading strategies available to developing country producers fall into the two categories outlined in figure 2. On the one hand, developing countries can attempt to identify and target niche markets. On the other hand, they can attempt to acquire new functions in the chain.

The first upgrading strategy can be defined as the entry to the "speciality coffee" segment. "Speciality coffees" covers every type of coffee that is of good quality, has a "special" feature compared with standard coffee and sells generally at premium rates. The

"speciality" of the products refers to the diversification of flavours or production methods, which consequently offers value added and attracts normally through its sophisticated attributes.

Speciality coffees are aimed at niche markets and higher-income consumers in industrialized countries. In contrast to standard coffees, which cater for mainstream taste, speciality options either claim an outstanding taste or a "classy" image. Each option described targets a particular segment of the population, which is supported by promotional strategies. Product innovation has added value to coffee and the consumer is prepared to pay a premium price for fashionable image, taste or comfort.

(a) Speciality soluble coffees. Product diversification in the soluble market has been particularly successful, particularly in Germany. Targeted mainly at the young consumer, a product variety of soluble coffees have been brought onto the market. Among these are products such as instant capuccino, espresso or café au lait that either are a comfortable choice because they include milk already or portray a new image of soluble coffee drinking. Having the flavour of Italy or France attached adds value, since these are traditionally the more sophisticated coffee drinking nations. These soluble new coffees offer options to attract the young, first coffee drinkers, whose consumption overall is decreasing.

(b) A second route to making coffee more "special" is to add flavours to freshly roasted good-quality coffee. Vanilla, walnut and coconut flavours are among these. Flavoured roasted coffees have become particularly successful in the United States. This route has been successful for small own-label coffee roasters, which own coffee bars and sell their range of coffee varieties under a new brand name. High- quality coffee, sold with various flavours, gives the visitor of the own-name coffee bars the image of the sophisticated cosmopolitan person who knows how to choose his or her coffee. Coffee chains such as Costa Coffee and Seattle Coffee have promoted these types of products.

(c) Gourmet coffees distinguish themselves by their quality. They may be roasted by smaller companies and sold through specialist retailers, such as coffee shops and delicatessens, or roasted by the big coffee companies and sold as premium brands through normal retail outlets. Unlike non-premium coffees, which are usually blended from coffees taken from various locations, these premium coffees use their particular locations and quality as their selling point. For example, high grades of coffee, grown on some higher-altitude volcanic soils in countries such as Colombia, Costa Rica or Guatemala, trade on their quality.

(d) Organic coffee aims at the health-conscious part of the population, a growing niche segment. Coffee can only obtain the organic label if it has complied with regulations mainly concerning the non-use of chemical fertilizers and chemically infested soil. Organic coffee is sold at premium prices, value being added through its healthy image. The trend towards organic products is growing, not only in coffee, and organic products have captured substantial space on supermarket shelves in the last few years.

(e) Another product innovation and value-adding strategy is the production of ready-to-drink (RTD) coffees. Canned iced coffees have become popular options competing with soft drink cans in the United States and Japan. Even though their market share is still quite small, the trend towards ready-to-use products is increasing and they are favoured by young people.

(f) Fair-traded coffee, which must carry the fairtrade mark to be authentic, aims at the politically conscious consumer. Fair-traded coffee gives small producers a chance to participate in world trade. Companies which are certified by the fairtrade mark are supposed to buy coffee directly from small producers or cooperatives. Credits with a set interest rate should be granted to the producer, as well as a fair price. The price will be set somewhat around the world price; however, it may be fixed so as to shelter the small producer from the great price volatility. Fair traded coffee is also sold at premium prices. The penetration of fair traded coffee has been increasing in Europe. By 1994, total sales had reached 11,000 tons (green bean equivalent), and fair traded coffee had gained market shares of at least 1 per cent in seven European countries (International Trade Centre, 1996: 53).

The markets for these products have been expanding considerably:

> "Growing niche markets for specialty coffee include Japan for gourmet varieties, and the United States where, despite a generally falling demand for coffee due to health considerations, the demand for gourmet/specialty coffee is projected to surpass US$3 billion by 1999. Most of the market growth for gourmet varieties has been for single-origin products such as Kenyan and Colombian coffee. In Japan and South-East Asia, there is growing demand for canned and ready-to-drink coffee" (UNCTAD, 1997b: 19).

Similarly, it was estimated that by 1990 the market for speciality and premium brand coffees in the United States had grown to $750 million, and that gourmet coffees accounted for 16–17 per cent of the total market for roasted coffees (International Trade Centre, 1992: 147).

Moving into speciality coffee markets is linked to the second upgrading strategy – taking on the tasks of branding and marketing. In order to command a price premium, high-quality coffees need to distinguish themselves from the standard product. The basis for this distinction is frequently location, reinforced by packaging and presentation. The convincing taste and the special packaging allow these products to be sold at a price premium. Examples are brands such as 100 per cent Colombian Coffee, Jamaican Blue Mountain and Tanzanian Kilimanjaro.

The next step beyond differentiating the product is to take direct charge of the marketing and branding process. Perhaps the most extensive efforts in this area have been those by the Colombian Coffee Board. It has projected the image of Colombian coffee through advertising and sponsorship (perhaps most notably in the Tour de France):

> "Colombian coffee has been particularly successful in establishing a brand image. The Federación Nacional de Cafeteros does the promotion through advertising campaigns using their logo attached to a '100 per cent Colombian' label. For instance, to establish a brand image, the label and logo appear on roast and soluble coffee, as well as on cups, napkins, and sugar packets which accompany Colombian coffee" (UNCTAD, 1997b: 19).

This strategy has been successful enough for coffee shops to label some products as 100 per cent Colombian, selling them at a slightly higher price than the standard blends. Once again, this strategy has been made more viable by the fragmentation of the coffee market and the move by large retailers into premium, own-brand products. Whereas the large retailers used to focus their own-label brands at the lower end of the market, they have now moved into premium products – selling freeze-dried instant coffee and single-country roasted coffee beans, for example, under their own labels. Frequently, these products are provided by smaller producers which cannot depend solely on the brand images they build up.

### 3. Returns to coffee growers

These strategies may successfully promote coffee consumption and increase the prices paid by consumers for coffee, but under what circumstances is this increased revenue likely to reach developing countries? It has been argued above that coffee processing should be kept close to the final consumer. What scope, therefore, is there for developing countries to increase the revenues they obtain when the final product is sold to the consumer at a higher price? Three routes might be considered: higher-quality inputs to the roasters, increased incomes to the growers, and branding.

Because of the difficulties involved in preserving the taste of roasted coffee, the standard way to enter the market is to sell to roasters. The producer receives a premium for reliable supply of high-quality coffee – either direct or through an agent[19] – and also gains the security of developing a more consistent relationship with a supplier. However, even in this case, the producer receives only a small part of the price premium for the product:

> "Retail premiums for gourmet coffees can be considerable, with roasted coffee selling typically at about four times the price of standard coffees. However, the premiums available for producers are much less" (International Trade Centre, 1992: 147).

The wholesale price of premium green coffees might only be 20–100 per cent higher than for standard coffee. However, provision of a premium brand may also provide greater security to coffee producers, who would benefit from more stable contractual relationships based on their supply of a product that is not easily substitutable.

Producers can also command a premium for fair-traded coffee. In this case, the producer gains in two ways. The fair-trade system is meant to ensure that the producers gain a larger share of the final price, and the fair trade brand itself commands a price premium. This system is particularly advantageous for smaller producers and cooperatives.

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[19] In the terminology of the marketing channels literature, the coffee is marketed through the "entire channel".

Finally, coffee producers can develop their own branding strategies. The Colombian Coffee Board has established a price premium, but it is not clear how much of this premium goes to Colombia. In order to take full advantage of this strategy, it would be necessary for the Colombian Coffee Board to integrate forwards into the roasting and distribution of coffee, either through direct investments in major consumer countries or through tie–ups with roasters and marketers. Clearly, only the largest producer countries and well-organized business associations could consider adopting this strategy. However, if the final market for speciality coffees has become more fragmented as a result of the development of new coffee retailing chains, there would be more opportunities for forward integration by developing country coffee producers.

## F. Support for diversification

What role should government and the private sector play in the diversification of the production systems into non-traditional export crops and in finding new ways of increasing the value added to exported food products? Current thinking on development has tended to emphasize the limitations of government interventions and the need to work with the private sector. Facilitation of private sector activities has been stressed as the appropriate role for Governments, and the strategy of "picking winners" has been subject to considerable criticism. In practice, the role played by government should vary according to the challenges facing actual or potential exporters. The role for government and the export promotion strategies it might adopt will be considered in relation to two different challenges: initial entry into export markets and upgrading of existing capabilities. This will be followed by a discussion of the role of the private sector.

### 1. Entry into export markets

A number of the successful cases of export diversification and upgrading described in the previous sections did not result directly from government intervention. For example, the horticultural export trade from Kenya (the largest exporter of horticultural products from sub–Saharan Africa to the European Union) did not initially develop a result of government intervention. Similarly, much of the success of coffee producers in Colombia has been the result of private sector initiatives. Nevertheless, the two examples of fruit exports from north-east Brazil show clearly that major new export industries may be developed as a result of direct interventions by government agencies. In this case, the initial impetus came from State-sponsored irrigation schemes and support by State development agencies for agricultural producers. Damiani (1999) describes in some detail how a federal government agency, CODEVASF, played a decisive role in attracting agricultural producers (including large firms), supplying credit, infrastructure and technical support, establishing linkages to experienced Brazilian exporters from other regions of Brazil, providing producers with information on export markets and their requirements, and promoting local-level cooperation between producers and exporters.

Many export markets have requirements (quality, consistency, delivery etc.) that cannot be learned about through supplying the domestic market, while in other cases export crops are not consumed domestically at all. As export markets become more complex and demanding, the gap between locally available knowledge and that required for the export market increases. Clearly, there is a start-up problem because one way of acquiring this knowledge – through learning by doing –presupposes that access to markets has already been achieved. Governments can help to overcome these problems. An export promotion strategy should take into account the following criteria:[20]

(a) The market. Are there attractive markets for potential export products? ProFound (1997) offers a ranking system based on demand trends, product

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[20] These criteria are partly based on the market analysis systems presented for developing country exporters developed by ProFound for potential exporters to the European Union (Profound, 1997: 87–100).

(b) standards, market conditions (number of buyers and sellers, prices, etc.), trade conditions (tariffs, subsidies, transport costs etc.) and the experience of the potential exporter.

(c) Marketing channels. What potential marketing channels exist? What are their requirements for logistics, delivery and packaging? How is access to these marketing channels secured? In this respect the level of concentration at different points in the chain is very important. If the buyers are highly concentrated, access is more difficult. This was seen in the case of coffee.

(d) Comparative advantage. Compared with other sources of supply, what advantages and disadvantages does the country possess? These might relate to such factors as climate, growing seasons, land availability and transport costs.

(e) Infrastructure. This might involve land transport and seaport or airport facilities, as well as efficient government export procedures, and a communications infrastructure that facilitates communication by telephone, fax and e-mail. The precise requirements will vary according to the product and the market. For example, fresh vegetables are usually air-freighted, whereas fresh fruit is sent by sea. For products with variable and unpredictable demand, efficient communications will assume more importance.

(f) What is the gap between market requirements and local capabilities and experience? What institutions would be most appropriate for bridging this gap?

For new entrants to export markets, it is advisable to focus wherever possible on (i) products already being grown for the domestic market, or products related to them, and (ii) less demanding products. In the latter case, this might mean melons rather than mangoes, and on half-channel rather than entire-channel crops. The reason for focusing on half-channel crops is that, first, marketing opportunities are more open in half-channel crops. It is easier to find a wholesale market or an intermediary than it is to establish a relationship with a major retailer or processor. Secondly, entire-channel marketing networks are frequently developed precisely because product characteristics or supply conditions are particularly complex, and the value chain requires extensive governance. These crops are more difficult to produce and market.

Even with half-channel crops, marketing requirements may be complex, and Governments can play a role in providing marketing intelligence. Exporters may need help in identifying market opportunities and interpreting the conditions of access to particular markets (for example, through the provision of information on food standards, packaging etc.). While in entire-channel networks this information may be supplied by the buyers, in half-channel networks, Governments may need to seek it out through their own intelligence networks), through the use of market information provided by international agencies or through support for the intelligence–gathering activities of business associations.

This information then needs to be translated into specific tasks for producers and exporters. For example, food products that are sold into premium markets must have good

taste and appearance, which depend very much on the quality of the raw material and processing. Therefore, the market demands have to be translated into information about suchissues as how crops should be grown, and the capital investment required for both growing and processing (irrigation, temperature-controlled transport, processing equipment, etc.).

In addition to the provision of these services, government has two further important roles. The first is to provide the basic functions of government efficiently. This is particularly important in the areas of infrastructure and export processing. Good transport facilities are essential for NTECs, but rapid transportation can be undermined by cumbersome trade procedures. As Thrupp notes (1995: 29), the provision of "one stop windows" to facilitate exports has played an important role in the promotion of the NTEC sector in Latin America. The second role of government concerns the distributive impact of NTEC development. It has been shown that NTECs favour large producers. Government intervention may be required–either to support cooperatives or to support sourcing by large firms and processors from smallholders.

## 2. Upgrading existing production

What role can government play in the upgrading of existing export capabilities? This question is particularly important, as upgrading offers a route to the increasing export revenues and raising value added per employee. It involves acquiring new functions within the chain, exporting new products or entering substantially different markets.

The first question about upgrading concerns access. It is very difficult to acquire new functions or gain access to new markets where processing or retailing is highly concentrated. This clearly has been the case in the coffee sector. The dominant position of a small number of roasters and processors has made forward integration in this market extremely difficult. In the fresh fruit and vegetable sector, the dominance of retailers has provided opportunities for the acquisition of new functions by producers and exporters in developing countries, but here again the question of access is critical. Exporters in African countries frequently report that they are approached by European importers who offer to sell their produce, but who do not have a secure contract with major retail chains. As a result, marketing is very weak and the exporters suffer.

If there is potential for upgrading, the provision of basic infrastructure by the State is essential. Upgrading often involves entering market segments with more demanding quality and delivery requirements, and these place increased emphasis on transport and communications infrastructure. Similarly, any active strategy of promoting upgrading undertaken by government should ask the basic questions about market opportunities, competitive conditions, marketing channels and comparative advantage posed in the previous section. Finally, macroeconomic stability, and particularly exchange rate stability and policy predictability, are important in sectors where value-adding strategies depend on making investments in processing facilities. It was seen that in the cases of fresh fruit and vegetables, adding value frequently involved extensive investment in processing and logistics facilities. Macroeconomic uncertainty tends to inhibit such investments.

Government has a less direct role to play in upgrading than in the initial promotion of export activities, but beyond these basic functions of government, the provision of basic support services to export industry, both directly and in partnership with businessassociations, increases in importance for upgrading strategies. Within value chains, learning by doing and the incremental acquisition of knowledge and competencies play an important role in upgrading, but learning by doing has clear limitations. It tends to reinforce existing competencies, and is particularly effective in enabling firms to perform particular tasks more effectively. When upgrading involves moving into new market niches or acquiring new functions, learning by doing is of much less use. Furthermore, developing countries cannot rely on their industrialized country customers to promote this type of upgrading. While in the case of the fresh vegetables chain it was shown that United Kingdom supermarkets were actively promoting the transfer of value–adding activities from the United Kingdom to sub-Saharan Africa, it is not uncommon for large buyers to discourage upgrading. In particular, buyers will discourage it if it threatens to reduce the supplier's dependence on the buyer.[21]

In such cases upgrading requires a combination of good understanding of markets (based on linkages with retailers and importers in industrialized countries) and innovation at the local level. Institutions that can support the search for new markets, the introduction of new crops and varieties, and the development of more effective growing techniques are essential if upgrading is to take place. Even if buyers will eventually promote upgrading, the advantages of being a first mover (or a very rapid follower) are considerable. Firms and countries that can develop and offer new products to retailers not only gain the rents derived from innovation, but also increase their value to their customers.

The development of institutional support may include active scouting for new market opportunities, promotion of the "national" brand identity in overseas markets, and agronomic services. There are various models for financing and providing these services, and the mode used will depend very much on national conditions and experience.

### 3. The role of the private sector

The private sector, both as individual firms and through business associations, also has an important role to play in developing access to international food markets and the upgrading of capabilities. Given the extensive list of activities that Governments might undertake, one priority for them should be to consider how to engage the private sector in this work. Eventually, many of the activities involved in developing export markets will be taken over by large private firms and by business associations. In some cases, the development of new products in markets can build on private sector expertise already developed in other areas. For example, when export fruit production was promoted in north-east Brazil, the knowledge and marketing links previously developed by the COTIA agricultural cooperative marketing system in São Paulo were used to provide production expertise and access to the European market.

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[21] Schmitz (1999) makes this argument in relation to shoe producers in the Sinos Valley in southern Brazil.

Among the many that functions by the private sector, three are emphasized here: provision of information and support on standards, collective action and business strategy.

Food markets are particularly complex for developing countries. Exporters must meet not only particular customer requirements relating to such factors as appearance and packaging, but also national and international food labelling and safety requirements. Food products must be safe to consume, and be shown to be safe. One important role for business associations (and Governments) is to provide firms with information about these many requirements. The information is available. Organizations such as the Liaison Committee for the Promotion of Tropical Fruits and Off-Season Vegetables Exported from ACP States (COLEACP) and UNCTAD have produced guides for exporters to developed country markets (Profound, 1997; UNCTAD and Société Générale de Surveillance S.A., 1998). Similarly, there are many publications available which explain and define the Codex Alimentarius and the Agreement on the Application of Sanitary and Phytosanitary Measures (the SPS Agreement). There are also a large number of specialist publications for various sectors of the food industry. However, it is important that this information be interpreted and presented to potential producers and exporters in intelligible formats. Business associations can play an important role in providing access to information for producers and exporters.

Business associations may help to identify market opportunities and interpret the conditions of access to particular markets (for example, through the provision of information on food standards, packaging etc.). This is particularly important when countries are first entering export markets, and for half-channel marketing chains. In entire-channel chains much of this information may be supplied by the buyers, but in other cases producers and exporters will need to rely on Governments and business associations for accurate and reliable information on export markets. Frequently, individual firms do not have the necessary financial and human resources for obtaining this information. In the case of the African horticulture industry, organizations such as FPEAK (Fresh Produce Exporters Association of Kenya) have played an important role in gathering export intelligence and presenting Kenyan industry to the world.

The second important role for business associations relates to the area of collective action. Some examples were discussed in section D. Entry into overseas food markets may require collective action. For example, imports of fresh fruit into industrialized countries from areas suffering from fruit fly infestation may be prohibited. Government (national or regional) has to take responsibility for eradication of such pests. While some interventions may be the responsibility of government, business associations can organize the response of the private sector, as well as exerting pressure on Governments to provide the necessary infrastructure and institutional support for food exports.

Collective action can also be important in the area of marketing. Trade fairs, for example, are an important means of acquiring new customers and raising awareness of the capabilities of a country or region. There are both economies of scale and externalities in trade promotion. Collective participation in trade fairs reduces the cost to each participating firm, while buyer awareness and exporter reputations are frequently ascribed to regions rather than individual firms. This provides a case not only for collective promotion, but also for collective regulation of exporters, as discussed in section D.

Finally, with the increasing concentration of retailing in industrialized countries, which tends to be associated with the development of entire-channel marketing systems, a greater emphasis is placed on closer management and monitoring of food value chains. This raises questions about linkages within the chain, and in particular about the benefits and risks of stronger linkages between firms in the chain. These take various forms: investment by one firm in another, and the creation of new joint ventures and strategic alliances which involve no direct investment but increasing mutual dependence. The options open to developing country firms and the circumstances they face are too complex to examine here. However, one basic point should be make clear. Joint ventures and strategic alliances are not cost-free, and they frequently fail. For firms in developing countries, the ideal scenario is for links with a developing country partner to provide greater security of access to markets and improved opportunities and resources for upgrading. However, partners in industrialized countries have their own priorities and partnerships only last as long as they are competitive. Firms in developing countries face costs and risks in developing joint ventures, equity partnerships, strategic alliances, and so forth. There is a role for business associations and international organizations to play in facilitating such agreements and in providing training and guidance for firms in developing countries so that they can better judge the costs, benefits and risks.

**Table 1**
Commodity prices and price projections
*(in constant 1990 dollars)*

| **Commodity** | **1970** | **1980** | **1990** | **1998** | **2005** |
|---|---|---|---|---|---|
| **Food** (cents per kg) | | | | | |
| Coffee | 457 | 482 | 197 | 286 | 211 |
| Cocoa | 269 | 362 | 128 | 161 | 149 |
| Tea | 333 | 231 | 206 | 196 | 149 |
| Sugar | 33 | 88 | 28 | 19 | 18 |
| Bananas[a] | 662 | 524 | 541 | 472 | 439 |

*Source*: World Bank (1999).
[a] $ per metric ton.

**Table 2**

Selected African export crops by type of marketing channel

| Half-channel crops | | Entire-channel crops | |
|---|---|---|---|
| Exchange crops[a] | Auction crops[b] | Minor crops | Perishables |
| Cocoa | Tea | Cloves | Banana |
| Coffee (robusta) | Coffee (arabica) | Cashew nuts | Pineapple |
| Cotton | Tobacco | Sesame seeds | Mangoes |
| Rubber | | Shea nuts | Avocados |
| Sugar | | Sisal | Green beans |
| Oilseeds | | Ginger | Asparagus |
| | | Pyrethrum | Cut flowers |

*Source*: van der Laan (1993: 182).
[a] The trading floor is concentrated in one or a few locations.
[b] Crops may be auctioned at dispersed locations, including in developing countries.

**Table 3**

Adding value to carrots: United Kingdom supermarkets

| **Product** | **Weight and price** | **Price per kilo** |
|---|---|---|
| Basic carrots, Class 1 | 18p per lb, loose | 39.4p |
| Basic carrots, bagged, Class 1 | 87p, 1 kg bag | 87p |
| Peeled and sliced carrots | 350g bag, 99p | £2.83 |
| Carrot batons (peeled, chopped, washed, ready-to-eat) | 200g bag, 59p | £2.95 |
| Peeled, ready-to-cook mini-carrots | 300g bag, 85p | £2.83 |
| Mini-carrots in tray | 225g tray, 99p | £4.40 |
| Mini-crunch carrots (peeled, chopped, washed, ready-to-eat) | 100g bag, 60p | £6.00 |

*Source*: Dolan et al. (1999: 12).

**Table 4**

Imports of fresh vegetables into the European Union, 1989 and 1997

| | HS 0708[a] | | HS 0709[b] | |
|---|---|---|---|---|
| | Ecu 000s | Index 1989 = 100 | Ecu 000s | Index 1989 = 100 |
| All Imports | | | | |
| 1989 | 57 483 | 100 | 120 865 | 100 |
| 1997 | 134 138 | 233.4 | 291 569 | 241.2 |
| Imports from sub–Saharan Africa | | | | |
| 1989 | 40 758 | 100 | 14 355 | 100 |
| 1997 | 97 465 | 239.1 | 40 946 | 285.2 |

*Source*: Eurostat.

[a] "Leguminous vegetables, shelled or unshelled, fresh or chilled".

[b] "Other vegetables, fresh or chilled (excl. potatoes, tomatoes, alliaceous vegetables,edible brassicas, lettuce 'lactuca sativa' and chicory 'cichorium spp.', carrots, turnips, salad beetroot, salsify, celeriac, radishes, etc.". This category includes artichokes, asparagus, mushrooms, sweet peppers and capsicum.

**Table 5**

Speciality vegetables in United Kingdom Supermarkets, April 1999[a]

| Product | Asda | M&S | Sainsbury's | Waitrose |
|---|---|---|---|---|
| Asparagus | Zimbabwe | Thailand | Peru<br>Thailand[b] | Thailand<br>Zimbabwe |
| Asparagus, babycorn and mangetout | Guatemala/<br>Spain /<br>Thailand[b] | | | |
| Babycorn | Thailand | Kenya | Thailand | |
| Babycorn and mangetout | Kenya | | South Africa<br>Zimbabwe | Gambia |
| Babycorn, mangetout and carrots | | Thailand/<br>Guatemala /<br>Holland | | More than one country |
| Mangetout, in cellophane packs and in trays | Kenya<br>Egypt*<br>Guatemala*<br>Kenya* | Kenya | Guatemala<br>Kenya<br>Zambia | Kenya |
| Dwarf beans | Egypt | | Kenya | |
| fine beans, in cellophane packs and in trays | Kenya | Kenya | Kenya<br>Gambia<br>Kenya*<br>Zambia* | Gambia |
| Fine beans and baby carrots | Kenya | | | |
| Hard-shell garden peas | | Kenya | | |
| Round beans | | Gambia | | |
| Stringless beans | | | | Egypt |
| Runner beans | Zimbabwe | Zimbabwe | Kenya | Zimbabwe |
| Runner beans and carrots | | Various countries | | |
| Sugar snaps, in cellophane packs and in trays | | | Guatemala<br>South Africa | Kenya<br>Guatemala |
| Brussel sprouts | | Kenya | | |
| Tenderstem broccoli | | Zimbabwe | | |
| Courgettes | | South Africa | | |
| Globe artichokes | Egypt | | | |

*Source*: Adapted from Dolan et al. (1999: 14).

[a] The country of origin in the table is that stated on the label. This is sometimes accidentally or deliberately mis-specified

[b] Where various countries are indicated as a source, with a slash between them, this means that different parts of the product combination are sourced from different countries. Where various countries are marked with an asterisk, it means that produce presented in the same packaging format was available from different countries side by side on the shelf.

**Table 6**

Cost structure of African fresh vegetable exports to the United Kingdom

| | One-tonne export lot of mangetout from Zimbabwe | | Export of fresh vegetables from Kenya |
|---|---|---|---|
| **Stage** | Price per tonne (£) | % of final price | % of final price |
| Producer | 630 | 11.9 | 14.1 |
| Exporter | 291 | 5.5 | |
| Packaging | 274 | 5.2 | 13.1 |
| Air freight and handling[a] | 1 036 | 19.6 | 21.2 |
| Total CIF from Africa | 2 230 | 42.2 | 48.4 |
| Importer charges and commission | 624[b] | 11.8 | 6.1 |
| Supermarket | | | |
| Stockout[c] | 714 | 13.5 | |
| Other costs | 285 | 5.4 | 45.5 |
| Mark-up | 1 427 | 27.0 | |
| Total price | 5 281 | 100.0 | 100 |

*Source*: Dolan et al. (1999: 13).

[a] While the air-freight charges might appear high, they match those for the Gambia in the early 1990s calculated by Little and Dolan (1993). In that instance, air freight costs amounted to 45 per cent of the total cost insurance and freight (CIF) export cost.

[b] Includes airport handling, transport and storage in the United Kingdom, as well as importer's (i.e. category manager's) commission. In the Kenyan example the United Kingdom airport costs may be included in the "air freight and handling" category.

[c] Includes losses from unsold produce, etc.

**Table 7**

Indices of volume and value of fresh vegetable imports from five African countries[a] into the United Kingdom

| | Index[b] | |
|---|---|---|
| Year | Volume (metric tons) | Price per ton |
| 1989 | 100 | 100 |
| 1990 | 111.8 | 99.9 |
| 1991 | 121.8 | 111.6 |
| 1992 | 129.4 | 112.5 |
| 1993 | 153.3 | 113.8 |
| 1994 | 184.8 | 108.2 |
| 1995 | 224.2 | 98.6 |
| 1996 | 273.5 | 104.4 |
| 1997 | 291.0 | 126.9 |

*Source*: Eurostat.

[a] Gambia, Kenya, South Africa, Zambia and Zimbabwe.
[b] Index of volume and value per ton of HS categories 0708 and 0709. These are defined in Table 4.

**Table 8**

Imports of selected fresh tropical and temperate fruits into the European Union[a] from the 70 ACP countries and Brazil, 1997

| Product | | ACP countries | Brazil |
|---|---|---|---|
| Pineapples | Value 1997 (Ecus 000s) | 109,199 | 13 |
| | Index of value (1989 = 100) | 112.5 | – |
| | Index of volume (1989 = 100) | 127.6 | – |
| | Index of value per ton (1989 = 100) | 88.1 | – |
| Guavas and mangoes | Value 1997 (Ecus 000s) | 15, 093 | 10,905 |
| | Index of value (1989 = 100) | 147.4 | 155.3 |
| | Index of volume (1989 = 100) | 204.1 | 241.2 |
| | Index of value per ton (1989 = 100) | 72.2 | 64.4 |
| Melons and papayas | Value 1997 (Ecus 000s) | 5, 612 | 14 861 |
| | Index of value (1989 = 100) | 133.3 | 222.2 |
| | Index of volume (1989 = 100) | 118.9 | 249.2 |
| | Index of value per ton (1989 = 100) | 112.1 | 89.2 |

*Source*: Eurostat.
Data refer to the 12 members of the European Union in 1989.

**Table 9**

Processed fruit in United Kingdom supermarkets

| | Price per 100g | Store | Countries of origin |
|---|---|---|---|
| Tins (432g) | | | |
| Own-label pineapple slices | 15.1p | All available at Sainsbury's and Tesco | Thailand |
| Own-label pineapple cubes | 16p-16.6p | | Malaysia |
| Del Monte pineapple slices | 17.4p | | Kenya, South Africa |
| Del Monte pineapple chunks | 17.4p | | Philippines, South Africa |
| Dried pineapple | 59.6p | Sainsbury's Tesco | Packed in UK |
| Dried papya | 59.6p | Sainsbury's Tesco | Packed in UK |
| Dried mango | £1.20 | Sainsbury's | Packed in UK |
| Exotic fruit | 63.6p | Sainsbury's | Packed in UK |
| Pineapple chunks in see - through preserved packages | - 34.3p | Sainsbury's Tesco | Ghana Thailand |

*Source*: Author survey.

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